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WORCESTER COUNTY
HORTICULTURE SOCIETY

TRANSACTIONS

1905

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UNIVERSITY OF MASSACHUSETTS
LIBRARY

TRANSACTIONS

OF THE

WORCESTER COUNTY

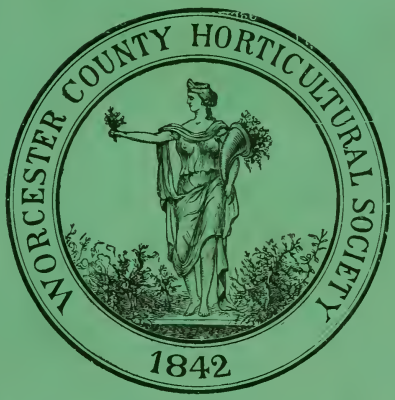
HORTICULTURAL SOCIETY

REPORTS OF THE OFFICERS

FOR THE YEAR ENDING NOVEMBER 1, 1905

AND

ESSAYS FOR SEASON OF 1906



ADIN A. HIXON, *Secretary*
18 FRONT STREET

Worcester, Mass.
THE COMMONWEALTH PRESS
50 FOSTER STREET
1906

TRANSACTIONS

OF THE

WORCESTER COUNTY

HORTICULTURAL SOCIETY

REPORTS OF THE OFFICERS

FOR THE YEAR ENDING NOVEMBER 1, 1905

AND

ESSAYS FOR SEASON OF 1906

Worcester, Mass.
THE COMMONWEALTH PRESS
50 Foster Street
1906

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LIBRARY
UNIVERSITY OF
MASSACHUSETTS
AMHERST, MASS.

WORCESTER COUNTY
HORTICULTURAL SOCIETY

For the Year Ending Oct. 31, 1905.

ANNUAL REPORT OF THE SECRETARY.

To the Members of the

Worcester County Horticultural Society:

In presenting my report I want to emphasize the necessity of being on the lookout for insect pests. Early in March the Brown Tail Moth was discovered in our midst and from that time until May 1 we had nests and worms on exhibition.

Owing to the vigilance of our Parks Commission, City Forester, the school children and the owners themselves after the first of June there were only four cases reported. It was surprising to see the interest shown by the children and teachers; for more than six weeks we had visitors before and after school. We kept on the Library Table jars of the nests and insects and several books covering the subject. We were indebted to Sec'y Ellsworth of the State Board of Agriculture for bulletins and leaflets for distribution. I received many letters from towns throughout the county for information, speakers, and samples of the insects and nests, all of which were answered excepting the last, there being a law prohibiting the carrying from one town to another of the Brown Tail or Gypsy Moth.

Many towns thought they were troubled but upon investigation I found them to be Yellow necked Apple Tree Caterpillar, Red humped Apple Tree Caterpillar, Tussock Moth and Antiopa Butterfly Caterpillars, the last one often seen in June eat-

ing the leaves clean on the ends of the limbs and being so numerous as to cause them often times to bend to the ground.

The insect that is causing the most trouble in this section is the San José scale. I have examined many places that were very bad and needed immediate attention, the owners have n't time and as there is no one in the business of spraying that they can hire, they are neglected. It is a menace to all of our city gardens.

Our exhibitions have been large with two exceptions, and those were the fault of the schedule rather than exhibitors, and have been well attended. Visitors from other states and Canada have been surprised, and thought they must be from professionals, but after interviewing some of our regular exhibitors they were convinced that the flowers were from amateurs.

Our pæony exhibitions were fine, E. J. Shaylor, of Weston, making a special show of many of the later introductions.

Our dahlia and gladioli exhibition were of unusual merit.

We were indebted to Bayard Thayer for a fine display of water lilies and other aquatics, G. Marston Whitin for orchids, dipledenias and decorative plants, also hothouse grapes, Mrs. J. C. Whitin for hothouse peaches and nectarines.

For the odd year the display of apples was unusually good. Peaches were fine and many exhibitors.

Vegetables were up to our usual standard.

The children's exhibitions of Saturday, July 29, and August 26, exceeded our anticipation. The first one we had 35 exhibitors beside the day nursery exhibit of 100 vases of flowers, representing 51 children.

The second exhibition we had 37 exhibitors, the exhibits of each day covering four long tables the length of the hall. After the awards were made, each exhibit received a gratuity of ten cents and upwards. This, and the paying of the children at the close, were two strong features of the exhibitions.

As in former years have furnished scions to all that have applied for them. Have distributed over two thousand.

All of the Government seed that has been sent to me I have given to the school children.

The exhibition of October 13 was one of the most remarkable in the history of the society. Thousands of visitors viewed this beautiful display. The stage was arranged with palms and ferns by H. F. A. Lange, making a beautiful background for the whole exhibition. In front of this were 200 vases of gladioli from Fred A. Blake making a bank of color and green. One of the corners of the hall was filled with carnations and roses, with a large vase of long stemmed American Beauties for a centre, by Leonard C. Midgley, of the Worcester rose conservatories. 150 vases of dahlias from W. D. Ross, also dahlias from M. F. Kelsey and Justin A. Abbott. Attractive displays of tuberous begonias from Mrs. N. P. Brown, Mrs. A. E. Hartshorn, Allyne W. Hixon, sweet peas from Mrs. O. J. Putnam, cut flowers of nearly all of the out of doors annuals from H. B. Watts, Mrs. J. F. Record, Ida J. Henderson and others. 42 exhibitors of Anjou pears; 43 of Baldwin apples, choice plants, grapes and cucumbers from G. Marston Whitin's conservatories. Elliott Moore exhibited a bushel box of apples; instead of being packed stems up they were on their sides, one layer one way the next the other way, making a very attractive package.

All of the vegetables were unusually fine.

At 12.30 dinner was announced. About 150 guests and members adjourned to the banquet hall above, where they enjoyed a good dinner, served by C. S. Yeaw. Tables were decorated with palms, ferns and flowers by the members.

The guests were J. C. Danforth, secretary of the Essex Agricultural Society; Lester Cudworth, president Oxford Agricultural Society; Edward Wilder, of Boston; J. Lewis Ellsworth secretary of the State Board of Agriculture; Mrs. E. M. Gill and Miss A. B. Gill, of Medford; R W. Bowen and Miss I. M. Bowen, of Providence; George L. Clemence, president of the Worcester South Agricultural Society; Dr. Willard Scott and Mrs. Scott. After dinner President Hadwen addressed the company.

Ladies and gentlemen of the society: I extend to you a cordial and hearty greeting to the festivities of the autumn exhi-

bitions arranged by your committee, which include a dinner in your own dining hall, and I also extend a hearty welcome to the distinguished guests who honor the occasion with their presence.

It will be 65 years to-morrow since the first horticultural exhibition was held, on October 13, 1840, in the town hall.

To be brief, these were the preliminary movements which resulted in the formation of the Worcester County Horticultural Society. An invitation was extended through the newspapers of the town to the public generally to contribute to the exhibition the best products of their fields, orchards and gardens. These invitations received a hearty response, not only from the people of the town and county, but gentlemen of the Massachusetts Horticultural Society also contributed largely to the success of the first exhibition.

To compare the first exhibition to the present would be comparing infancy to well-developed maturity. The annual growth from then until now has been truly marvellous, and who can correctly measure the advance of the future which is sure to come from the science and practice of horticulture.

No employment is better than that encouraged by horticultural societies. Twenty-four exhibitions have been held this year— two for children (extra) and ten for lectures and discussion.

Mr. Hadwen said that he thought he was the only man present who had attended the first exhibition, and requested that if there was any other person there who attended the first exhibition, 65 years ago, that he or she would stand up. Maj. F. G. Stiles then stood up and said that he was present at the first meeting and had been a good attendant of them ever since.

Short addresses were made by Mrs. E. M. Gill, Edward Wilder, J. Lewis Ellsworth, Hon. George L. Clemence, Lester Cudworth, W. D. Ross, Nathaniel Paine, S. A. Burgess, Major Fred Stiles and A. A. Hixon.

The winter meetings have been well attended, but the Committee have felt for several years as though some of our meet-

ings should be in the evening so as to reach those unable to attend in the afternoon, so arranged the following programme:

Thursday, March 30, Ornamental Trees, O. B. Hadwen; Shrubs and Herbaceous Plants, E. W. Breed; Bedding Plants and Summer Flowering Bulbs, Adin A. Hixon.

Thursday, April 6, Fruits. Apples, William J. Wheeler; Pears and Plums, Arthur J. Marble; Peaches and Grapes, Herbert A. Cook; Strawberries, George A. Leavens.

Thursday, April 11, Vegetables. Corn and Beans, Charles Greenwood; Root Crops, Herbert R. Kinney; Vine Crops, Simon E. Fisher.

These were short, practical talks by men of experience, and should have been better attended, as they were thoroughly advertised and hundreds of cards sent out. It may be well to try it again.

Saturday, February 18, a party of about fifty members attended the meeting of the Massachusetts Society to listen to an address by Dr. George T. Moore, from the Department of Agriculture, Washington, on Bacteria as Fertilizers. He proved to be a very interesting speaker, explaining the theory of Nitro Culture to the satisfaction of our party.

Saturday, March 5, a party of about thirty-five lady members attended the exhibition of the American Rose Society, held in connection with the Massachusetts Horticultural Society. It was one of unusual excellence and the finest ever witnessed by the members of our party. Both of these parties visited the greenhouses of W. W. Rawson, Arlington. Most of the houses were filled with lettuce, though some were being set out with cucumbers. A Telegram reporter accompanied each party.

Wednesday, June 14, as in former years, about 150 members accepted the invitation of President Hadwen to visit his grounds on Lovell St. A vote of thanks was given Mr. Hadwen for his hospitality.

Valuable information may be gained by attending such meetings.

The Worcester County Bee Keepers' Association, Worcester County Market Gardeners' Association, Massachusetts Fruit

Growers' Association have tendered votes of thanks for the use of our rooms for their meetings. Their meetings are free, and as they are kindred societies, discussing subjects strongly allied to horticulture, should be interesting to us all.

The daily press has been very liberal with advance notices, as well as reports of meetings and exhibitions, and are entitled to our respects and thanks.

To the officers and members I desire to express my thanks for their support and willingness to assist at any and all times.

The Annual Meeting of the Society was held Wednesday, November 2, 1904. Called to order at 10 o'clock A. M. President O. B. Hadwen presiding. The records of the last meeting read and approved. Adin A. Hixon, Secretary, read his report which was referred to Committee on Publication. Adin A. Hixon, Librarian, read his report which was referred to Committee on Publication. Nathaniel Paine, Treasurer, read his report which was referred to Committee on Publication. Motion made and carried to proceed with the election of officers with the following result:

President, ...	O. B. HADWEN
Secretary, ...	ADIN A. HIXON
Treasurer, ...	NATHANIEL PAINE
Librarian, ...	ADIN A. HIXON

A motion was made by Charles Greenwood and carried that a committee of five be appointed by the chair to nominate three Vice-Presidents and 47 Trustees. The chair appointed Charles Greenwood, George Calvin Rice, Fred A. Blake, W. D. Ross, George Cruickshank, who reported for Vice-Presidents, Stephen Salisbury, Calvin L. Hartshorn, George Calvin Rice, and 47 Trustees a list of which you will find on back cover of Transactions and Schedules.

A motion made and carried that Nathaniel Paine succeed himself as a member of Committee on Finance.

A motion made to appropriate $50 for children's exhibitions created considerable discussion from a misunderstanding that it was for School Gardens, finally carried and referred to the Trustees.

Voted to dissolve.

Annual Meeting of the Trustees was called immediately upon the dissolution of the meeting of the Society. President O. B. Hadwen presiding.

Records of last meeting read and approved.

The election of Committees on Library and Publication, Nomenclature, Arrangements and Exhibitions, Winter Meetings, Auditors and Judges was in order, a list of which will be found with the officers on the back covers of the Transactions and Schedules. San José Scale, Commission—Charles Greenwood, A. A. Hixon, Calvin L. Hartshorn, Henry E. Rich, James Draper.

Voted, to leave the appropriation for children's exhibition to the Committees on Arrangement, and Exhibition.

Appropriations voted:

Flowers and plants,	$1,000.00
Fruits,	850.00
Vegetables,	650.00
Binding Books,	250.00
Library and Publications,	300.00
Winter Meetings,	300.00
Children's Exhibitions,	50.00

Voted to dissolve.

Special meeting of the trustees, Thursday, June 1, 1905. Meeting called to order at 2.45 o'clock P. M. President O. B. Hadwen presiding.

Secretary Hixon stated that since the election of officers that Henry E. Rich, judge of fruit, had passed away and the meeting was called to elect a successor.

On motion of Simon E. Fisher, Will P. Thayer was nominated.

On motion of Fred E. Blake, James Draper was nominated.

Whole number of votes,	20
Draper,	11
Thayer,	8
Scattering,	1

Mr Draper was elected.

Mr. Hadwen read a communication from the committee of the George F. Hoar Memorial Fund and moved that $25.00 be appropriated, it was carried. Mr. Hixon explained that there was a similar committee arranging for a testimonial for Edward Winslow Lincoln and moved that $50.00 be appropriated, it was carried.

Voted to adjourn.

During the year the following additions have been made to the membership:

Rose A. Boyle, Worcester.
Mrs. Charles Knapp, "
Mrs. Fannie M. Page, "
Samuel H. Tyson, "
M. F. Kelsey, "
Cephas N. Walker, "
Josephine A. Randall, "
Mrs. Annie H. Roper, "
Anthony F. Rebboli, "
Nathan S. Brown, "
H. A. Abrahams, Shrewsbury.
Jessie E. Prairie, "
Mrs. J. E. Williams, Northbridge.
D. E. Wheeler, Leominster.
Benj. M. Chamberlain, Holden.
W. H. Boyden, Leominster.
Frank L. Johnson, Oakdale.

Respectfully submitted,

A. A. Hixon, Secretary.

Oct. 31, 1905.

REPORT OF THE LIBRARIAN.

To the Members of the

Worcester County Horticultural Society.

During the past year many of the unbound books have been bound. Considerable interest has been manifest in children's gardens, both home and school, and the various leaflets, bulletins and reports that I have received have been in demand especially among teachers. The following books, periodicals, bulletins and papers have been added to the Library.

United States Department of Agriculture. Bulletin No. 155.

Farmers Bulletin. Nos. 28 and 29.

Experimental Station Record. Vol. 16. Nos. 2 to 12 inclusive. Vol. 17. No. 1.

Organization lists of the Agricultural Colleges and Experimental Stations in the United States in December, 1904.

Report of the Secretary of Agriculture, 1904, No. 79.

Accessions to the Department Library, July 1, 1904, to July 1, 1905.

List of Station Publications received at the office of Experimental Stations during January to June 30, 1905.

Farmers Institute Lectures, Nos. 1, 2, 3, 4 and 5.

Annual Report of Farmers Institute.

Monthly list of publications, October, 1904, to July, 1905, inclusive.

Crop Report, Vol. 6.

Year Book, 1904.

Bureau of Forestry. Bulletin, No. 45. Planting of White Pine in New-England.

Proceedings of the 9th Annual Meeting of the American Association of Farmers Institute Workers, St Louis, Oct. 18, 19 and 20, 1904.

Michigan Experimental Station. Bulletins, Nos. 219 to 232 inclusive. Special No. 32.

Maine Experimental Station. Bulletins, Nos. 108 to 118 inclusive.

Maryland Experimental Station. Bulletins, Nos. 99 to 104 inclusive.

Connecticut Experimental Station. Bulletins, Nos. 146 to 151 inclusive. Report, Part 2, 3, 4 and 5, 1904. Forestry Publication, No. 1.

Kentucky Experimental Station. Bulletins, Nos. 13 to 16 inclusive.

Kansas Experimental Station. Bulletins, Nos. 124 to 129 inclusive.

New York Experimental Station. Bulletins, Nos. 257 to 267 inclusive.

Minnesota Experimental Station. Bulletins, Nos. 85 to 88 inclusive.

Delaware Experimental Station. Bulletins, Nos. 67 and 68.

West Virginia Experimental Station. Bulletins, Nos. 93, 95 and 96.

Ohio Experimental Station. Bulletins, Nos. 150, 151, 156, 157, 158, 159, 160, 161 and 165.

Rhode Island Experimental Station. Bulletin, No. 103.

Iowa Experimental Station. Bulletins, Nos. 81, 82 and 83.

Illinois Experimental Station. Bulletin, No. 98.

Massachusetts Horticultural Society. Transactions, Part 1, 1905.

Missouri Botanical Gardens. 16th Report, 1905.

American Pomological Society. Special Report, 1904 and 1905.

United States Interstate Commerce Commission, 18th Report, 1904.

Canadian Year Book, 8th year, 1905.

North Carolina Horticultural Society Experimental Farms. Southern Pines. Plant Food.

School of Horticulture. Hartford, Conn. Report of the Director, 1904.

Field Columbian Museum Publication 98, Vol. II, No. 4. Report of the Director to the Trustees, 1903 and 1904.

Address on Normal Schools of Agriculture for Institute Workers. John Hamilton, 1904.

Massachusetts Experimental Station Bulletin, Meteorological Observations, 1904 and 1905.

Massachusetts Crop Reports, 1905.

Massachusetts State Board of Agriculture. Nature's Leaflets, Nos. 28, 29, 30, 31, 32.

Massachusetts State Board of Agriculture. Report, 1904. Twenty copies for distribution.

Massachusetts Agricultural College. Bulletin, No. 103.

Cornell Agricultural College Experimental Station. Bulletins, 225, 227, 228, 230, 232.

Agriculture for Beginners. 1903.

How to know the Wild Fruits. Maude G. Peterson.

Our Native Orchids. Gibson and Jelliffe. 1905.

Blossom Hosts and Insect Guests. W. H. Gibson.

Nature's Library. Doubleday, Page & Co. 10 volumes. 1905.

Agriculture. Prof. F. H. Storer. 3 volumes. 1903.

Manual of the Trees of North America. Charles Sprague Sargent. 1905.

The Country Home. E. P. Powell. 1904.

Orchard and Fruit Garden. E. P. Powell. 1905.

Another Hardy Garden. Helen Rutherford Ely. 1905.

Field Book of American Wild Fowers. Mathews. 1904.

Farming by Inches.

Driven Back to Eden.

Money in Gardening. G. Burnap Fiske. 1903.

Barn Plans and Out Buildings. 1903.

Fruit Gardening. Thomas Bridgman.

American Agricultural Year Book. 1905.

The Business Hen. H. W. Collingwood.

Ten Rod Farm. Charles Barnard.

On the Portraits of English Authors on Gardening. S. Felton. 1830.

From Henry Lovell. Whip and Spur. Waring. 1897.
Science of things Familiar. Dr. Brewer. 1855.
The Reason Why.
Inaugural Address. Walter H. Blodget, Mayor. 1905.
Worcester Parks Commission Report. 1904.
Manual of General Court. 1905.
From the Society of Antiquity, various reports.
From the Public Library, various reports.
From the Antiquarian Society, various reports.
Companion to the Orchard. Phillips. 1831. English.
Worcester City Directory. 1905.
American Florist.
Country Gentleman.
Country Life in America.
Florist's Exchange.
Gardening.
Garden Magazine.
Horticulture.
New England Homestead.
Rural New Yorker.
Suburban Life.
Gleanings in Bee Culture.
Bird Lore.
The Forester.
Rhodora.
Farm Journal.
Telegram.
Post.
Weekly Guide.

English:

Agricultural Gazette.
Gardener's Chronicle.
Garden.
Gardening.
Country Life Illustrated.

Respectfully submitted,

ADIN A. HIXON, Librarian.

Horticultural Hall, Nov. 1, 1905.

REPORT OF THE TREASURER.

The Treasurer of the Worcester County Horticultural Society herewith presents his annual report for the year ending October 27, 1905.

There is no floating debt at this time, except a few small bills, which were not received in time to come into this report.

The Dewey Fund will show an increase of $56.46 and the Eames Fund $21.53 on account of interest accrued from the Savings Bank deposits.

The Dewey fund amounts to $1,468.37, a small amount having been used in the purchase of books.

There will be paid from the Eames Fund for premium on apples in 1904, $20.00, making the amount of the Fund $617,-44.

The mortgage note of the Society has been paid and there are no debts except some that may have been contracted within the last few days.

The detailed report of the receipts and expenditures here follows.

NATHANIEL PAINE, Treasurer, in account with
WORCESTER COUNTY HORTICULTURAL SOCIETY.
DR.

1904.			
October 27	Cash balance from last report,		$2,657.39
1905.			
October 27	Receipts to date.		
	From rent of store,	$6,500.04	
	" rent of hall,	4,158.00	
	" membership fees,	71.00	
	" sale of banquet tickets,	159.00	
	" interest on deposits,	39.47	$10,927.51
			$13,584.90

Cr.

1905.		
October 27	Payments to date.	
	City taxes and water bills,	$ 954.24
	Mortgage note and interest,	3,089.87
	Paid judges,	172.00
	Salaries,	2,050.00
	Coal,	199.89
	Insurance,	30.81
	Annual banquet,	215.50
	Gas and electric lighting,	735.48
	Repairs,	1,479.51
	Books and periodicals,	73.74
	Telephone,	69.18
	Binding pamphlets,	131.50
	Premiums paid,	2,282.66
	Incidentals,	584.81
	Printing,	180.59
	Geo. F. Hoar memorial,	25.00
	Edward W. Lincoln memorial,	50.00
	Winter meeting expense,	59.00
		$12,383.78
October 27	Balance,	1,201.12
		$13,584.90

The Francis H. Dewey Fund.

1904.		
October 27	Balance,	$1,411.91
1905.		
October 27	Interest to date,	56.46
		$1,468.37
October 27	Paid for books to date,	54.30
October 27	Present amount of fund,	$1,414.07

THE WILLIAM H. EAMES FUND.

1904.		
October 27	Balance fund,	$615.91
1905.		
October 27	Interest to date,	21.53
October 27	Present amount of fund,	$637.44

Respectfully submitted,

NATHL. PAINE, Treas.

Worcester, October 28, 1905.

The undersigned, auditors of the Worcester County Horticultural Society, hereby certify that they have examined the books and accounts of the treasurer and find the same to be correct, and properly vouched, and that the investments and cash are accounted for.

CHARLES S. BACON,
H. WARD MOORE.

ESSAYS

A. D. 1905

4th January, A. D. 1906.

ADDRESS

BY

O. B. HADWEN, PRESIDENT.

At the incoming of the new year we have come together to renew our interest in our winter course of lectures and discussions and to manifest our fidelity to the Horticultural Society and our deep interest in everything that concerns its usefulness and welfare.

The interest in our exhibitions the past year has been well advanced in fruits, flowers and vegetables. New features are yearly manifest denoting the skill and science of improving cultivation.

There never was more rapid progress made in Horticulture in the country than has been during the life of this Society.

To refer to the production of new fruits and new flowers, so rapidly brought into notice of late years by the new process of hybridization, also to the vegetables, unknown when this Society was formed, which now are seen upon our tables and furnish good and nutritious food to our families, would intrude upon your patience.

At this opening of the year, let me extend to you the most cordial greetings and best wishes for our continued prosperity.

The work of the Society for the past year, we can see, has made important progress.

Our lectures and discussions upon Horticultural topics, our exhibitions of fruits, flowers and vegetables, have never been more interesting and instructive, and the improving taste in arrangement is especially manifest of good training in the happy blending of flowers and plants at our Chrysanthemum Show.

We have great cause for thankfulness that able and wise men in past years established this Society and by their efforts and those of their associates and successors so much has been accomplished for the improvement of the Society and the community. I am happy to report an improvement in our financial condition. During the past year we have received a flattering increase in the rental of our halls, which seem a universal favorite for lectures, concerts, balls, banquets and society gatherings, where the most convenient and best is desired.

Lovers of the really beautiful in horticulture have had many opportunities during the past season to admire the grand contributions we have had upon our tables, many specimens that can hardly be excelled, contributed by trained and experienced cultivators, with which we are highly favored.

The growing tastes for native plants and flowers, which have added such a charm to our exhibitions, by our young lady contributors, the skill displayed in their arrangement and the scientifically naming of so many specimens has not only proved an object lesson in itself but a good lesson in botany with so many specimens.

In the past season there has been an increased exhibition of Gladiolus. We are now independent of the English and French. The wonderful variety grown in this country is seemingly endless. The marvellous blending of color in the flowers of our native production is unequalled and an increasing interest is manifest over the whole country.

It is not often that a season may be called perfect for the development of all sorts of fruit,—so many varying conditions are requisite for the growth and development of each,—the extremes of cold and heat, of early and late frosts, of moisture and drought,—we have become accustomed not to expect too much. But the weekly exhibitions demonstrate the tables are most always reasonably filled.

Promptly in June we have the strawberry with its wonderful variety, often new sorts never seen before. They have their allotted period of life, and pass away to make room for others. The small fruits that follow,—the raspberry, the currant,

gooseberries and blackberries, of longer period of life, yield a good return for good care and cultivation.

The orchard fruits, the apple and pear, that outlive generations of men, are always seen on our table,—some seasons exceptionally good, other seasons defective and poor, but prove worthy of good care and cultivation and encouraging the orchardist corresponding with his efforts.

Our years of experience teach the importance of securing every condition contributing to success for each variety of fruit. The cultivator who properly enriches his land to nourish each sort is seldom heard to complain, and when suitable conditions are furnished he is comparatively independent of extremes, either of temperature or moisture.

Horticultural training tends to develop human facilities in a manner that all the forces act in harmony, in whatever direction they are pursued; when united with well-directed industry enables a man to reach the highest degree in his calling. Great advantages pertain to early training, for youth is the period when the head and hand more easily work in harmony.

This year our Society set apart fifty dollars for the encouragement of children to be paid in prizes and gratuities for meritorious product of their gardens and industry. This is a preliminary to further future advancement. It is hoped that before many years the Society will offer prizes for the encouragement of landscape effects upon rural homes, as the tide is turning from city to country.

Forestry is an important interest which is being connected with the love of trees. One-third of the lands of the State, seemingly, is adapted by nature to the growth of forest trees, only they thrive specially well when grown with liberal treatment. The advanced prices of lumber and the constant need of supply will ensure a profit from lands planted with forest trees and intelligently cared for. Whatever binds one to his home and town add to his love of country and nurtures all the better elements of his nature.

Ladies and Gentlemen: This is no occasion for me to present all the delightful phases of Horticulture. Your own en-

thusiasm testifies to your love for our Society. We are all grateful for the advantages under which we pursue our calling. Let it be our aim to transmit our inheritance unimpaired to those who shall follow us. I will close by wishing you the compliments of the season.

11th January, A. D. 1906.

LECTURE

BY

GEORGE T. POWELL,

PRESIDENT OF AGRICULTURAL EXPERTS ASSOCIATION, NEW YORK.

Subject:— Orchard Insect Pests and Modern Methods of Spraying.

I know of no subject that is of more vital importance than the one to be discussed this afternoon, that of the care of our orchard trees, in consideration of some of the great dangers which threaten them at the present time.

We are comparatively a new country and we have not as yet that high appreciation of trees as is held in older countries. We have most ruthlessly destroyed a vast territory that has been covered with forest trees, a territory which made the natural home of insects which, so long as they could be maintained in their natural homes, were not pests; but when we have so ruthlessly destroyed our forests we have not been sufficiently wise to replace the trees, thus we have thrown out upon our cultivated fields many kinds of insects that have become pests. At this time when we desire to plant orchards or to raise choice fruits we find an infestation of so many kinds of insects that we are confronted with the fact that whoever plants fruit trees must protect them from insects. Few of us have made a study of insects because until recent years there has been no occasion for the farmer to be an entomologist. The man who attempts to plant orchards without a knowledge of the insects that attack

them might far better plant no trees, because there is no opportunity for him to cultivate fruits successfully unless he treats them scientifically. Now, before we can work intelligently against insects we must know something about their habits. The first duty is to know the character of the insect that is a pest upon our trees. There are two distinct classes, one known as the eating type, those that have mandibles or jaws, that eat foliage, that eat fruit, and when we understand this class, there is a specific form of treatment for it. The other class is entirely different. It is the class known as the aphides or plant lice. These do not eat but suck the juices from the trees. Although different from the other class, in several instances I have known farmers to use the same treatment for both; hence, they have come to the conclusion that spraying did no good, simply because they were acting in the wrong manner.

There is not time in one afternoon to begin to touch this subject, hence I shall confine myself to the few things possible with us or that could be done upon our farms. I have a few illustrations and will make use of them.

The first is that of the tent caterpillar that are so very troublesome in the early spring. We all recognize the work of the tent caterpillar, the insect that is more responsible for the decline of our apple orchards than any other that I might name. In some seasons it is very disastrous. It begins its work early, before many of us are aware. I have frequently found it in March. A week of warm weather will bring them out. Then there is no place for them to go except upon the buds so they cluster there and remain until the first evidence of life is shown in the buds. Then they eat them and frequently the apple crop is sacrificed at this time. While the trees will blossom, yet it may be that in sixty days the buds are not there and it is simply because the tent caterpillars have eaten upon them so that they have weakened the buds and although they blossom they cannot bear fruit.

Possibly a little later will be found the green aphis, or plant louse. These get out early in the season and concentrate upon the buds. Thus two kinds, an eating and a sucking insect, are

both working upon the buds and weakening them so the crop is ruined. The treatment of these at this time is important. Every one should go through his orchard in March, especially if there are a few warm days. These insects are very tenacious of life; they are not so easily destroyed as we think but will stand a great deal of cold, so, if we discover they are upon the buds, the spraying machine should go out at once.

For all eating insects we have to apply poisons, and after several years of experience I have found that arsenate of lead is the most valuable. Paris green has been used for many years, and while it is good, it is not so adhesive, being easily washed off if it rains soon after it is applied. Arsenate of lead is very effective and if followed by rain its value is not lost. The Bowker Co., of Boston, make it and sell it under the name of "Disparine." It is, I think, the best insecticide in use to-day.

I now speak of the "bud moth." How many of you know of the bud moth or the eye-spotted bud moth? That insect is doing immense damage. It is very minute and works right in the bud. As the bud unfolds this small reddish brown moth bores right down into it, and when it gets into an orchard it is responsible for from fifty to seventy-five per cent. loss in that orchard. Arsenate of lead is very useful in destroying this moth. It is all over New York State and in some years is exceedingly destructive. The first evidence of its presence is a little discoloration of the ends of the buds. The ends of the buds will be brown, and if you pull them open you will find the little larvæ eating inside the buds. The tree will still bud and blossom but you will get no fruit.

The tent caterpillar is very destructive to the foliage of the trees which is exceedingly unfortunate, because if the foliage is injured the function of the tree is destroyed for that season and it simply exists, so these ravages should be checked, and thorough spraying with arsenate of lead will control them. When the caterpillars begin to build, have men go through the orchard with fish poles and on the end of these wrap a little burlap or gunny sacking. Start below at the lower part of a nest and twist up the caterpillars with the cloth and leave none

in the tree. When it is not convenient to spray this method can be used. I dislike to burn with kerosene. It is not a good practice because the injury to the branches is considerable and frequently the caterpillars get away so it is not an effective manner of destroying these caterpillars.

There are other types of insects. Examine your trees carefully where no spraying is done. You will be surprised to find how few perfect leaves there are upon the trees. When the leaves are skeletonized it is the work of the pear slug. This can be controlled by this spraying with arsenate of lead. It is wonderful to find how few perfect leaves there are and it is surprising that there is anything left upon the trees when we consider the number of insects that are preying upon the foliage.

I will speak next of some of the insects that injure the fruit. The coddling moth is the one insect that is responsible for the wormy apples and I think our country never had such a visitation of the coddling moth as this last year. The loss is not less than $26,000,000 annually in New York State and the loss to the nation is not less than 500 million dollars annually.

The coddling moth is a very beautiful, delicate moth, but it is a night flyer. They are rarely found. They have to be sought for in the night and I think those not trained in their identification would never come across one.

As soon as the blossoms fall from the apple trees in the spring, this moth comes forth and flies all through the orchards and deposits its eggs upon the outside of the apple. Each moth lays about fifty eggs but only one upon an apple. Other moths, however, visit the same apple. In a few days these eggs hatch and then the young moth crawls down to the calyx end and lives there a number of weeks. It then bores its way out, and in so doing makes the holes in the apple which so seriously affects its value that these apples are absolutely rejected in the markets.

The treatment for this moth is not difficult but needs to be done at just the right time. If the blossoms have nearly all fallen they should be sprayed again with arsenate of lead of the

same proportion, ½ pound to 50 gallons of water. This spraying is just as effective as more arsenate of lead. It is also desirable to use Bordeaux mixture because of its protection against fungus attacks. The formula for this is 4 pounds sulphate of copper dissolved in 25 gallons of water, 4 pounds of good stone lime slaked and put into 25 gallons of water. Then put the two mixtures together. Some dissolve the sulphate of copper and the lime each in a small quantity of water, then mix them and add a large quantity of water. This does not make Bordeaux mixture and is not worth much. Dissolve them as I have given them to you, then add 1½ pounds of arsenate of lead and you have the right material for doing early spraying.

The value of spraying young fruit is this: the young fruit at this time points upward and there is a slight opening, hence the spraying should be done immediately after the blossoms drop while the petals are still open. This seems like a provision of the Creator. As the young larvæ crawl in they are destroyed at once.

There should be a second spraying as fruits do not all come along at the same time. Some come a little later and a second spraying is needed for these in 12 or 14 days which will destroy all eggs that are hatching at the second period. Two good sprayings are usually sufficient and should give us anywhere from 85 to 90 per cent. of good apples. This last year there was a later brood of coddling moths which did immense damage. If I had sprayed the third time it would have added, at least, $1,000 dollars to the value of my apple crop. We had to keep casting out boxes of apples because of the marks of the coddling moth. Spraying the third time would not have cost me more than $100, a large increase in the value of the crop for the expenditure of time and money. We need to understand the habits of this insect thoroughly before we can master them and when we do we can control them.

One class of insects that increase very rapidly is the plum curculio. It attacks not only plums but apples and is very hard upon cherries. It is also of late years attacking peaches

and is becoming a very serious pest. It is a very difficult matter to control it for it lays its eggs inside the fruit. It is about the size of a very small house fly, the very smallest, minute house flies. Its manner of working is to force its proboscis in the skin making a circular cut and laying its egg in this cut. It then takes the edges and pastes them down after turning them back so that the fruit cannot cover the egg. The old curculio feed some upon the foliage and if Bordeaux mixture can be used can be kept in check. If Bordeaux mixture be sprayed upon plums and peaches when the fruit is very small the curculio can be kept in check. The plum trees should be sprayed just as soon as the young fruit is discernible. We sprayed very thoroughly with Bordeaux mixture and on the sprayed trees there was not 20 per cent. of loss. The trees not sprayed at this time were of no value.

The State entomologist, Dr. Lintner, made arrangements to come to my farm whenever I sent for him but he was delayed for three days and when we examined the fruit it was past help. We sprayed, but the fruit was very defective. So when your trees come out in full blossom and you are expecting a fine crop of fruit and find the fruit in a short time all on the ground and wonder what is the matter, it is the work of this curculio, and spraying with Bordeaux mixture very thoroughly is the only protection that can be given that is effective. It does no injury to the foliage and hot or cold water can be used for dissolving.

Question: "How spray into a tree that takes a 30-foot ladder?"

For this a pump of very great power is needed. I have men spraying trees that are 70 feet high. A man goes up about 25 feet and then with hose and double nozzle is able to spray the whole tree thoroughly. We have a pump with a good cylinder so we can get a tremendous pressure. I have a power sprayer on my farm, a Niagara gas sprayer with a tank holding 200 gallons of water. The power is gas, such as is used in soda fountains, and is shipped from New York and then forced into the tanks.

I now take up another type of insects, the plant lice. These

have to be destroyed by a different material. They do not eat; they suck their substance from the trees, hence they need to be covered with an oily spray such as whale oil, kerosene emulsion, etc. They breathe through their bodies, through openings in their backs and any substance which you can throw over them and close up those holes will smother them. Hence, oily substances that will spread right over the body are the best. Just as soon as these insects appear they should be sprayed. They are wonderfully prolific and they have many generations. One pair of San José scale will be the progenitors of over three billions during the season.

Ninety per cent. of all the fruit trees on Long Island are completely covered by the San José scale and all through the Southern states the San José scale has done immense damage. It is now spreading into New England and if no treatment is given the scale, the apple orchards in New York, New Jersey and other states will be practically extinct. It is very minute and is not discovered until the effect is seen. When trees begin to decline people wonder what can be the matter. Its increase is something wonderful. An orchard of 27,000 peach trees was totally destroyed by San José scale. This scale is one of the most formidable things that we have to deal with to-day. There should be some one in every community whose business it is to go through the community and discover these pests.

I have here some samples of wood from Groton and the gentleman asks, "What can be the trouble?" I find that it is infested with the oyster shell scale. This scale does not spread as rapidly as does the San José scale. The rose scale is very troublesome to the rose and the San José scale also attacks roses.

We have to-day various things with which we have tried to exterminate the San José scale. Have recently used a solution known as salt, suphur and lime. This is very difficult to make and apply, but if properly made it is effective. If not properly made it is not effective.

Boil together 30 pounds of flowers of sulphur, 15 pounds of

lime and 15 pounds of salt. This has been found to be as effective as any quantities that can be put together. This must be boiled for a full hour and applied while still hot. Put into 50 gallons of water and spray over the trees. Few have facilities for boiling these materials and it is very troublesome to apply. The properties are so caustic that it is not easy to handle and it is troublesome to the horses if the spray blows upon them.

I will give you one that promises excellent results. It is known as "Scalecide," and it is simple to apply. It is manufactured by the G. P. Pratt Co., 11 Broadway, New York. Send for circulars and you will get full information. This is a soluble oil. It consists of 1 gallon of soluble petroleum put into 20 gallons of water. Put on immediately. It works satisfactorily; it works at once. I think we have in this a simple preparation that is easily applied and is not expensive. This should be applied in the winter time upon the scales. On any warm, pleasant days the trees having scales upon them should be sprayed. In the autumn these scales are not advanced and can be easily washed off, but to be very thorough I intend to spray again in the spring. With two sprayings there need be no injury to our trees or fruit, and I think that perhaps by the autumn spraying, one very thorough spraying may be able to give us protection.

Kerosene must be applied very cautiously as it will injure the trees otherwise. It must be used on a bright day.

There are two insects that have interested your state greatly—the gypsy moth and the brown tail moth—they are most formidable, and I have long thought that the state of Massachusetts should not be forced to fight these alone, because if these spread over our country the harm we have experienced will be as nothing to that which will follow. These insects are something to be greatly dreaded.

I have here some specimens of the work of the brown tail moth. Folded up in these leaves are some young caterpillars. They are all ready to come out next spring. They will change their skin several times before they reach the size of the full

grown caterpillar. They lay their eggs upon the under side of the leaves, and the caterpillars devour the foliage, and in the fall fold about themselves the leaves and fasten them by silken threads so firmly that no storm can shake them off.

Every owner of property should be watchful for the very first of these moths. It is then that they are most easily controlled.

I have charge of a large fruit farm in New Hampshire and was interested to do something for New England agriculture and planted a large apple orchard in New Hampshire. I was interested to start this apple industry which is of such very great value here in New England. I told the owner that the only thing I saw in the way was these two moths. I said "undoubtedly they will come to your property," and the man who had charge of this place was to notify me if either of these moths made their appearance. Last spring I was there and found between 50 and 75 nests. A public meeting was called that same evening to discuss the brown tail moth which had appeared in the town of Pittsfield. The entire community was turned into a vigilance committee and the brown tail moth was very closely gathered up last spring, and last autumn I found very few specimens indeed.

The danger is when they get into the forest trees. I think we can control them in our orchards, and I believe that in the future we shall plant low headed fruit trees so that we can reach them easily with sprays and thus protect them from the ravages of these insect pests. I am even working with dwarfs. I am putting out two types of dwarfs,—one that grows only 12 feet in height. These pests can all be brought under control when dealing with low-headed trees, but the danger is when they get into our forest trees.

The gypsy moth lays its eggs everywhere—in the ground, under the fences and rocks, and I have found their eggs plastered all through cracks and crevices, and this makes it a most formidable thing to control. It is best to change our system of planting trees and keep them within low range so that we may control these different pests.

We are so intimately connected now with foreign countries by our international relations that we are liable to the invasion of other things. Three-fourths of the pests which we have to-day are of foreign importation, and we know not what may come in the future. I believe the most important thing for us to do is to become informed concerning them, and I believe that we should begin in our public schools along the lines of nature work, so that our pupils may be sent into the fields and gardens everywhere, trained to discover these things as soon as they appear So let us work together for the advancement of nature study in our schools that shall be along these practical lines and we shall have discovered a way to control these insect pests.

18th January, A. D. 1906.

LECTURE

BY

FRANK L. JOHNSON,

SUPERINTENDENT OF WORCESTER COUNTY TRUANT SCHOOL.

Subject:— There is no Such a Thing as a Lazy Boy.

There is no such thing in this world as a lazy boy. We get the best results from our work when we have an object in view. A story is told of a man who put another man to work to chop in the woods with the understanding that he was to do just as he was told, and informed him that he must cut all the wood with the back of the ax. After that he went to see how the man was getting along and found him somewhat discouraged. He went again and found that the man had gone away. He said he did not care to work unless he could see some results. Boys like to work if they can see results, and in proportion to the results which bring good to themselves the more enjoyment there is in the work.

I had a man come to me one day with his boy who had been sent to our school. Asking him about the boy, he said, "He is the laziest boy I ever saw in my life. He wont work. He is too lazy to work, too lazy to do anything." I tried my best to get that boy interested in anything. I thought that real hard work might be just the panacea for that boy, so we gave him a wheelbarrow and told him to wheel stones, and after he had wheeled the stones we had him wheel them back again. I then had a ride with this boy and I saw his face brighten up when he saw a certain wild flower. He told me its name and got out and picked it. I

asked him if he would not like to have a flower garden at the school. He was pleased, so I drove back and told him he might have a place for his garden and that he could have it as soon as he had moved the stones and fixed it up. Soon the garden was made and the flowers were cultivated. After five years' work with that boy he was sent back to his father's farm, took charge of it and has to-day the reputation of a man who is willing to work.

Another boy became interested in the carpenter shop at the school. Before he went away he went to the shop and made a little wheelbarrow, painted it and sent it into the office as a souvenir of the last day at school. That boy came to us with the reputation of being a lazy boy.

I have not seen all the boys in the world and cannot tell what is in the mind and what is the condition of every boy in the world. Many people have said to me, "Why, I know there is such a thing as a lazy boy because I have such a boy myself." One man came and told me that he knew better because he himself had been the laziest boy. I am not going to make up any definition but will take the definition that Webster gives for laziness,— "Disinclination to action or exertion." The only boy that I ever knew in my life who was disinclined to action was a dead boy. Laziness in a boy is a theory; in the man a condition. It is like cigarette smoking in a boy, a theory at the start but, after the habit is formed, a condition. So it is with the idle, lazy disposition which is found in the world. It is found in the boy and, if checked, ceases to be even a theory, and does not become a condition, but if this theory is not broken up it reaches a condition which is called laziness. Break up the idle habits of the lazy by work and follow it up.

There is nothing in this wide world that will make boys do wrong like having nothing to do. If you have a lazy boy in your family you may make up your mind that that boy has nothing to do. If he has something to do, arrange so that he may learn to like his work, and the habit of work will creep upon him. He will become so interested that it will become a pleasure to him to work. Even though boys get into the con-

dition of which I have spoken, remember that there is no situation in life so bad that it cannot be mended.

Boys like to work and want to work, and there is nothing more pathetic than to have a boy who wants to work and has nothing to work with. There is less pleasure in work than there should be. We are looking more and more to-day for excitement than for duty. Remove the cause and this condition becomes changed. There are more occasions for pleasure and for amusement for our boys who thus fritter away much of their time and in this way acquire the reputation of being lazy. If boys are lazy, did it ever occur to you that we have a great opportunity to help our boys in their duties. If you say that your boys are lazy then you must say that your boys are bad, for as all roads lead to Rome so the road of idleness leads to crime. Work is exercise we do not like; exercise is work we do like. So see to it that your boy has the habit of work and learns to like it and naturally becomes accustomed to it. If your boy is kept busy much of the working day you may safely leave the results to themselves. Send him to bed tired. Let him be ready for the work of the morning after the night of rest. Our country to-day depends on our boys. In a few years at the very most the sun of our lives will have set and the boys who are now on the streets and in the schools will have taken our places, so do not be careless and indifferent to the boys.

Stephen A. Douglass said, "I care not whether slavery in the territories be voted up or down. It makes no difference to me." Mr. Lincoln replied, "I am sorry that our friend Douglass is so constituted that he does not feel the lash when it is laid on another man's back."

See that our boys are not left so that their habits lead to the condition that results in idleness.

Boys are inclined to think of self and try to make everything bend to their own ideas. They have an idea that they must give all attention to themselves. This is a great mistake. Boys should remember that there is no such thing as finding true happiness by searching for it directly; it must come, if it

comes at all, indirectly by service. So there is no such thing as finding true greatness by searching for it directly. One of the greatest lessons to teach the boy is that he is not to do what he likes but to like what he does.

I saw a picture the other day of the "Barefoot Boy" that illustrates just what I want:

"Blessings on thee little man,
Barefoot boy with cheek of tan.
With thy turned up pantaloons,
And thy merry whistled tunes;
With thy red lip, redder still,
Kissed by strawberries on the hill;
From my heart I give the joy,
I was once a barefoot boy."

There was no idleness in that boy, but place a conquering hero out in a ten-acre lot on a hot summer day to pick up stones, and he will get the reputation of being a lazy boy.

Sometimes the boy wants to do right and hardly knows how, and I would like to tell the boys that there are fifty ways in which to make a beginning. Fear God. Honor your parents. Be an honest boy. Never violate your word nor do any act that will cause you to be ashamed. Be kind to all dumb animals. If a boy never begins he will never amount to anything. If the beginning sets him thinking it will keep him thinking and these thoughts will improve him. Outcasts of this world were made so because they did not have the courage to begin, and that is where our help comes in.

It has been said that a boy brought up on a farm is the laziest of all boys. A farm is a poor place for a boy unless the farmer has heart and soul enough to give him a chance, and some farmers think too much of what they themselves want and too little of what their boys do. The farmer forgets that he was once a boy. There is no recreation for the boy. The home affections have been sadly neglected so that in the heart of the boy there is an unsatisfied place. As there is nothing to make the farm attractive a disposition springs up to leave the farm. Is this picture overdrawn? How many times have the father and mother watched with sorrow and sadness the boy,

longing to go out and leave the dear old home. All boys who happen to be upon farms are not calculated to make good farmers. The talents of some run in another direction. Taking that, they succeed. On the farm they were a failure. Other boys dislike it because it is hard work. And why is it hard work? Because there is no attempt to make the work attractive. It becomes necessary for the farmer to set the boy and his relation to the farm above the work to be done.

Activity in education is one of the things which will keep the boy from being what you may style, "lazy." Activity is the very existence of the boy, and nothing is more irksome to a boy than to be required to sit still for an hour, because this is idleness. The longing for action is to be encouraged and not repressed. Why is the kindergarten so enjoyed by little ones? One teacher expressed it on account of the motion, activity and recreation found there. No boy is sent to the truant school for truancy from a department where there is manual training. The boys like it. The rollicking boy, who runs and jumps is as much to be amused as the quiet boy, and if this desire for activity is checked by violence or otherwise, dissatisfaction usually results.

25th January, A. D. 1906.

LECTURE

BY

J. WOODWARD MANNING, of Reading, Mass.

January 25, 1906.

Subject:— Ornamental Trees and Shrubs.

The subject of ornamental trees and shrubs is an extremely broad one. In order to cover it in a way that I think would appeal to you I have attempted to classify them according to their special purposes. I shall use so far as I can, the common names and the lists will be arranged according to the various uses to which the trees or shrubs should be placed.

I will first speak of trees for Street Shade Purposes:

Perhaps the finest tree that we can consider as a street shade tree is the American elm. It has its limitations as its roots are troublesome and in narrow streets it spreads out too broadly and the shade is a little denser than we would like but no trees allow so free circulation of air. The English elm is next though not so well adapted for street planting for American conditions. The English elm holds its foliage longer, is slower in growth and less desirable.

Another tree of first importance is the ash. With the possible exception of the elm no tree seems so well adapted to street planting as the American ash. The trunk of this tree must be protected from harm; it is free from attractions that draw children.

In the city the Ailanthus has a great advantage as it will grow in less soil than most any other tree.

The honey locust is seldom thought of for street planting but

it makes a tree that stands very high in value for that purpose.

For maples we have the ash-leaved, silver, sugar, scarlet and Norway. The lower branches of the Norway spread out too much and both the Norway and the rock maple give too dense shade for city planting but outside the city there is no objection to the maple. The trees should not be planted less than 50 feet apart, though you do not get shade effects so soon as with thicker planting.

Within the last two or three years the pin oak, red, white and scarlet oak have all come in for street planting. The pin oak and red oak are both good trees and they grow as rapidly as the maples after the first four or five years and will thrive where some other trees will not.

The oriental plane has been highly recommended. It is a handsome tree but is subject in long winters to winter kill.

Where wet and moist conditions prevail the willow grows rapidly and can be used where other trees would not thrive.

The American linden I can hardly recommend for street purposes and the horse chestnut and American chestnut are also better omitted, the horse chestnut because of its blossoms that attract the small boy and because its tendency to litter the ground causes complaint.

We have now covered the principal street trees suitable for street shade purposes.

List of trees for street shade purposes:

Ash, American White,
European (impractical).
Elm, American,
European varieties.
Ailanthus (city).
Chestnut,
Honey Locust,
Horse Chestnut.
Linden, American,
European.
Maple, Ash leaved,
Silver,
Maple, Sugar,
Scarlet,
Norway.
Oak, Pin,
Scarlet,
Red,
White.
Plane, Oriental,
American.
Poplar, Carolina.
Willow, Black.

For park and large lawn trees we can use many that cannot be used for street planting. The American ash comes into prominence here for the reason that the ash makes so fine a tree in this section of the country. It leaves out late and drops its foliage late. It is a tree that should be used where it comes up naturally.

The American beech is so well known it is hardly necessary to recommend it. The purple beech is one of the most desirable ornamental trees that we have. It is sturdy in growth, delightful in foliage effects.

The catalpa is very desirable for this purpose; the flower effect is good and they are rapid in growth.

Our American chestnut is best adapted for use in large parks. Few lots are sufficiently large to admit of its use. There is no tree in our native flora that produces so interesting an effect as our American chestnut in its blooming period.

The honey locust and the black locust are desirable trees because of their adaptability to sterile soil conditions. No other tree, imported or native, that keeps such clean foliage throughout the summer as the black locust.

In birches we have the red birch with its beautiful bark in rich tones of yellow, the canoe birch and the black and white birches which are well adapted for moist conditions.

The English elm is desirable on account of its late retaining of foliage. The Scotch elm is very desirable because of its round topped foliage. The slippery elm is rarely used. It makes a smaller tree and would be adapted for a small lawn where a large elm cannot be used.

The black walnut is desirable for its moderate shade effects and makes a fine, open-topped tree. A walnut from Japan has been introduced in late years.

The aspen and Japanese larch are vigorous and both grow on dry soils, and there is great beauty in these trees. The American larch is also desirable.

Of the maples, the Sycamore maple, Schwerdlers maple, the purple leaf or Norway maple are all desirable.

A tree that is seldom planted and yet is much valued is the nettle tree.

In oaks the English oak is good. The white oak, under favorable conditions, is good for from 300 to 500 years. The laurel oak is hardy.

Of the poplars, the Bolleana grows like the Lombardy poplar.

The Lombardy is good because of its rapid growth. For park trees the tulip tree is one of our most interesting in the peculiar form of its foliage.

Of willows the silver leaved and golden barked are distinctive and large masses of foliage come to the ground.

Park and large lawn trees:

Ash, American.
Beech, American,
European,
Weeping,
Purple.
Catalpa, Speciosa,
Bignonoides,
Kaempfers.
Chestnut.
Honey Locust.
Locust, Black.
Birch, Black and Sweet,
Gray,
Red or River,
Canoe,
Cut leaved.
Elms, English,
Scotch,
American,
Rock,
Slippery.
Horse chestnut,
Common,
Red-flowering.
Walnut, Black,
Siebold's.
Larch, European,
American,
Japanese,
Golden.
Maple, Sycamore,
Schwerdler's,
Weir's.
Nettle Tree.
Oak, English,
Chestnut,
Mossy-cup,
Laurel,
Golden English.
Poplar, Bolleana,
Lombardy,
Golden.
Tulip.
Willow, Silver leaved,
Golden barked,
Salmon backed,
Thurlow's,
Wisconsin,
Babylonian.

Under the head of trees for small leaves we omit the larger trees and take principally those that do not grow more than 30 feet in height. Of the low trees suitable for such work can recommend the cut leaved Alder. They are short lived.

The ash runs up very straight. Of these we have the Mountain ash and the oak leaved which forms a full topped tree not over 25 feet in height. In dry situations these are strictly hardy.

The cut leaved birch, the pyramidal birch and the purple leaved, which is distinctly purple in its tone, are all desirable.

Of the catalpas there is the golden and purple leaved both of which are useful.

In the cherries there is the European bird cherry, a small tree covered with foliage in June. Many cherries are extremely ornamental because of their flowers. The Chinese double cherry tree is very graceful and the ranunculus flowering cherry forms a small tree with white flowers and brilliant crimson fruit.

Among trees to be especially recommended for small lawns are flowering crabs. Parkman's is also to be recommended. In spring these are a perfect mass of deep pink flowers followed in the fall by fruit. Th Chinese double flowering crabs are quite pretty and are desirable for small lawns. The white flowered dogwood makes a desirable tree.

The white fringe tree, a large bush, is one of our best small trees.

The Gingko is a Japan tree and is extremely interesting on account of the foliage.

The Judas tree is one of our Southern trees. It is a desirable little tree as it takes up but little room and in the spring delights with its pink flowers.

The Katsuru tree is one of the best lawn trees. The Varnish tree has compound golden green foliage and bears yellow flowers.

The Japanese lilac makes a small round headed tree and the flower spikes appear in great abundance in July or late June.

Of the Magnolias the Cucumber tree is the largest growing of all; the Umbrella Magnolia is slow in growth. The showy Magnolia is small, bears pink flowers in May.

Of the Maples adapted to small lawns, the English field maple is desirable in that the foliage is dense. The Japanese maples are desirable and should be given a place. Another maple is the Tartarian maple which in the autumn has shades of yellow, gold and even black.

The purple leaved plum is the one tree that ought to be wiped off the face of the earth. It is the first tree to get the San José scale.

All the spindle trees are interesting on account of their fruit effect. They have dense foliage and the flowers are inconspicuous but they show a great mass of colored fruits.

The Thorns have recently come into notice and many new kinds have been described. They are forms of our native Thorns and are desirable. The Washington thorn is a small tree and bears masses of small scarlet berries.

The yellowwood is a tree that is highly desirable because it makes a fine round headed tree with a small round trunk and in June and July bears a quantity of long racemes of white flowers.

The weeping willows have practically gone out of use. The new American willow is very graceful.

Trees that are desirable for mass planting and forming back grounds are gray birch, Siberian crabs, flowering dogwood, hop tree, hornbeam, Judas tree, Lombardy poplars, spice bush, spindle trees, native thorns and willows.

Of the conifers, the arbor vitæ is among the foremost that are adapted to a variety of uses.

The larger growing are Norway spruce which is indispensable where rapid growth is desired.

Of pines there is nothing better than our white pine.

The white spruce is better adapted to small lawns than the Norway spruce.

In firs the Colorado silver fir makes a rapid growth. The common silver fir is good for planting but seldom lives more

than fifteen years, not that it dies out but it loses it slowest branches. The Frazer's fir of the south is better because it holds its branches longer.

Trees for small lawns :

Ailanthus.
Alder, Cut leaved.
Aralia, Hercules club,
    Maximoviezi.
Ash, Mountain,
    Oak leaved,
    Flowering.
Beech, Fern leaved.
Birch, Weeping, cut leaved,
    Young's,
    Pyramidal,
    Red,
    Gray.
Catalpa, Bunge's,
    Golden and purple leaved.
Cherry, European bird,
    Double white sweet,
    Japanese weeping,
    Siebold's double,
    Chinese double,
    Ranunculus flowered,
    Weeping.
Crab, Flowering,
    Parkman's,
    Bechtel's,
    Chinese double,
    Siberian.
Dogwood, White flowered,
    Pink flowered,
    Weeping.
Fringe Tree.
Gingko.
Golden chain.
Hop Tree.
Hornbeam.
Katsura Tree.
Larch, Golden.
Lilac Tree, Japanese,
    Amoor River.
Magnolia, Umbrella,
    Cucumber Tree.
Maple, Variegated negundo,
    Moosewood,
    Tartarian or Ginnala,
    English Field.
Mulberries, White,
    Black,
    Russian,
    Weeping.
Oak, Cypress,
    Golden leaved.
Pagoda Tree, Japanese,
    Weeping.
Pea Tree, Siberian.
Peach, Flowering.
Poplar, Lombardy.
Plum, Purple leaved.
Sassafras.
Shad Bush.
Spice Tree.
Sorrell Tree.
Spindle Tree, European,
    Broad leaved,
    Wahoo,
    Bunge's.
Thorn, English,
    Double White,

Thorn, Double Red,
Single Red,
American,
Cockspur,
Scarlet Fruited,
Washington.
Photinia Villosa.
Varnish Tree.
Willow, Golden or Salmon barred,
Laurel leaved,
Rosemary,
Willow, Siebold's,
Kilmarnock.
Yellow-wood.
Conifers: Arbor Vitæ,
Cypress, Japanese,
Firs,
Hemlock,
Junipers,
Pines,
Spruce,
Yews.

Leaving trees and coming to the shrubs, I will first speak of shrubs for individual planting; by this I mean shrubs that can be planted as individual specimens on the lawn. I do not by this mean that I would advise the indiscriminate planting of shrubs all over the lawn. The massing of the shrubs should be around the house or as a division line, the lawns thus being kept as open as possible. The dogwood can be used for this, the red osier or golden barked. Of the bush honeysuckles few can be recommended for individual planting. All form a broad, spreading bush, low to the ground. There is a mass of flowers in early June and the stems are later covered with red berries. The snowdrop tree in some locations is desirable because of its flowers in early May. Of the lilacs, the Persian with white flowers is the most desirable. The Pearl bush is effective with its white flowers in early spring. The Japan quince makes a fine individual shrub for the lawn. The Van Houtte's spirea, if properly trained, is very good. The cut leaved sumac is one of our best shrubs with its fernlike foliage. The Japanese snowball forms a fine plant with its branches covered in late June with pure white flowers. The Japanese chestnut forms an upright bush with compound foliage and long panicles of wisteria-like flowers. The dwarf horse chestnut is one of our finest lawn shrubs.

Shrubs for individual planting:
Dogwood, Red Ozier,
Golden barked.
Golden Bell, Weeping.
Honeysuckle, Morrows Bush.
Hydrangea paniculata gr. fl.
Snowdrop tree.
Lilac, Himalayan,
Common,
Rouen.
Pearl Bush.
Japanese Quince.
Rosa multiflora.
Chinese Spindle Tree.
Japanese Maples.
Spirea, Thunberg's,
Van Houtte's.
Sumac, Cut leaved,
Fern leaved.
Syringa, Gordon's,
Showy.
Snowball, Japanese.
Chestnut, Japanese.
Horse Chestnut, dwarf.

Shrubs for isolated planting to produce individua lity:
Almond, flowering.
Amelanchier.
Cornelian Cherry.
Benzoin or Benjamin Tree.
Honeysuckle, Fragrant Bush.
Lilacs, Japan Tree.
Pearl Bush.
Plum, Double-flowered.
Raspberry, Flowering.
Silver Bell.
Spindle trees in variety.
Sumacs in variety.

Vibernum, Siebolds, Black Haw.
Winter Berry.
Mountain Holly.
Shrubs for Undergrowth:
Aralia pentaphylia.
Azalea viscosa (Swamp) Calendulacea, arborescens
Buckthorn, Common, Western.
Clethra.
Dogwood, Silky.
Hazel, Witch.
Mountain Holly.
Hydrangea, Wild.
Jews Mallow.
Privet, Common, Amoor River, Ciliated.
Raspberry, flowering.
Snowberry.
Coral-berry.
Wolfberry.
Spindle Tree, European, Running, Creeping.
Viburnum, Arrow-wood, Maple-leaved, Amer. Wayfaring tree.
Winterberry.
Yellow-root.
Shrubs for dry soils:
Acacia, Rose.
Amelanchier.
Barberry, Common.
Bayberry.
Blueberry, Dwarf.
Chokeberry, Red, Black.
Cinquefoil.
Dogwood, Panicled.
Indigo Shrub.
New Jersey tea.
Sumac.
Viburnum, Maple-leaved.
Sweet Fern.
Adams Needle.

Shrubs for grouping in masses of one kind :

Allspice, Carolina.
Azaleas, Ghent.
——— Mollis.
New Jersey tea.
Cinquefoil, Shrubby.
Clethra or Sweet Pepper Bush.
Currant, Golden.
Deutzias in all kinds.
Dogwood, Panicled.
Golden Bell, Fortune's and Weeping.
Groundsel Shrub.
Honeysuckles, Tartarian, Golden flowered, Morrow's.
Hydrangea, Panicled, White-leaved, Garden.
Jews Mallow, Single and Double.
Kerria, White.
Sweet Pea Shrub.
Lilacs in variety.
Oleasters in variety.
Privet, Ciliated, Dr. Regel's.
Rose, Ramanas, Japanese, Shining leaved, Sweet Briar.
Spirea Arguta, Anthony Waterer, Callosa, Bumald's, Van Houtte's, Thunberg's.
St. Johnswort.
Stephanandra.
Sumacs in variety.
Syringa in variety, Lemoines hybrids.
Viburnum, Arrow-wood, Cranberry bush, Maple-leaved, Velvet-leaved.
Weigelias in variety.

Shrubs for foliage effects alone :

Aralia pentaphylla.
Barberry, purple-leaved.
Blueberry.
Buffalo-berry.
Variegated Cornelian Cherry.
Dogwood, Silver-leaved, Spæth's Golden-leaved.

Elder, Golden-leaved, Cut-leaved.
Hazel, Purple-leaved.
Hydrangea, White-leaved.
Jews Mallow, Variegated-leaved.
Privets in variety, Silver-leaved, Golden-leaved.
Rose, Red-leaved.
Coral-berry, Golden-leaved.
Stephanandra.
Sumacs, Cut-leaved.
Syringas, Golden-leaved.
Spiræa, " "
Tamarisk.
Weigelia, Siebold's variety, Dwarf Variegated-leaved.
Sea Buckthorn.
Oleaster, Silver leaved.

Shrubs for producing rapid screen effects:

Amorpha.
Aralia, Five-leaved.
Bladder senna.
Buckthorns, Common, Alder, Western.
Currant, Golden.
Deutzias in variety.
Dogwood, Silky, Siberian, Bailey's.
Elder, Common.
Forsythia, Fortune's.
Groundsel Shrub.
Honeysuckle, Morrow's, Tartarian, Hybrids.
Hydrangea paniculata.
Privet, Amoor River, Ibote's.
Rosa multiflora.
Spiræ, Ninebark, Van Houtte's.
Sumacs in variety.
Syringa, Downy-leaved, Large flowered, Showy.
Viburnum, Arrow-wood, Cranberry bush, Nanny bush, Stag bush, Wayfaring Tree.
Weigelias in variety.

Shrubs for moist soils :
Azalea, Swamp.
Button Bush.
Red Osier.
Cornel, Silky.
Elderberry, Common, Red Berried.
Rhodora.
Roses, Swamp, Shining-leaved.
Viburnum, Arrow-leaved, Cranberry-bush.
Alder, Black.
Blueberry.
Leatherleaf.

Evergreen Shrubs :
Ashberry.
Azalea amoena, Indica alba.
Box.
Barberry, Holly-leaved.
Leather-leaf.
Fire Thorn.
Furze.
Garland-flower.
Heather.
Germander.
Heaths.
Holly.
Mountain Laurel.
Leucothae.
Rhododendron.
Periwinkle, Speedwell, Thyme, Spindle Tree.

February 1, A. D. 1906.

Subject:—Revision of List of Fruits Recommended by the Worcester County Horticultural Society.

Mr. Hadwen. The subject for to-day is the revision of the list of fruits recommended by the Horticultural Society. The first speaker was to be Mr. E. M. Bruce of Leominster but he is unable to be present.

I have had a little experience in growing apples. Sixty-three years ago I planted the seeds from which my orchard has been grown. The seeds came up, I budded the trees and planted them. I have about twenty acres of apple orchard. I have had an opportunity of trying many kinds; too many, more than I would recommend. While I have tried a great many kinds I have settled down to a few. For either domestic use or profit, apple culture gives as good an opportunity in this section of the country as any fruit we have. It is perhaps better for people who are going into apple growing, either for market or for domestic use, to find out what apples are adapted to their own locality. Some are found to do well in cultivated ground, others in uncultivated or grass ground. It is only by experience that each person can determine his own conditions of soil. If one grows apples for the market he must find which apple will afford him the greatest profit or an apple that is demanded by the public.

Nature seems to have demonstrated pretty clearly that apples that have their origin in certain sections do better in these sections. We have found out that apples that have originated in Massachusetts sometimes do better than some that have their origin in the West. Our exhibition tables demonstrate the apples that we cultivate for domestic use and for the market.

A list of apples was recommended by this society in 1892-3. Since then a number of new kinds have come up. Some of

these had their origin here as the Hubbardston which originated in the town of Hubbardston but was never widely disseminated. It was early in the 40's I first saw it in Newton.

The Leland Spice is an apple that has never been very widely cultivated in this county. It is an excellent apple and is much liked for domestic use. The Gravenstein is an excellent apple not only for eating but for domestic use. Is in much demand in the market wherever known. The Golden Sweet is a good sweet apple but is not used so much as formerly.

For winter apples, the American Beauty is nearly sweet, is very handsome and a good grower. The Baldwin originated in this State and is the apple for the million. More Baldwins are exported than any other kind. The King apple is of New York origin, is a fine apple and of fair productiveness and is reasonably profitable to grow. The Leicester Sweet originated in the town of Leicester. I have known it for seventy years. I regard it as the finest of winter sweet apples both in size, quality and its keeping quality. I know of no sweet apple among winter sweets that I should prefer to it. The Northern Spy originated in New York; it requires good cultivation and under these conditions will bear heavy crops. The R. I. Greening originated in Portsmouth, R. I. This tree stood near an inn and the man who owned the tree was named Green, so it was called the R. I. Greening. I do not think it is as good to-day as formerly. I think that apples have their day. The Sutton Beauty is a comparatively new apple; it has never been widely disseminated. The Hubbardston Nonesuch and Sutton Beauty I regard as first-class apples for this climate. The McIntosh Red is receiving considerable cultivation. Its color and eating properties are fine. There is some question in regard to its keeping properties but for eating it is quite a prominent apple among the new ones. The Foundling is an apple that originated in the town of Groton; it should be planted near the house because they fall from the trees early.

ARTHUR J. MARBLE, PEARS.

I will try in what I have to say not to be influenced by

personal feeling, but by experience and the knowledge which one acquires by contact with the markets.

The early growers of pears cultivated too many kinds. About forty years ago I learned that something over one hundred varieties on one place would be a superfluity. We have found in our experience that certain pears have come to be exhibited in quantities, while a pear that some individuals would say was as good as any, we find that but two or three people cultivate, and if you go to the markets you will not find them at all. It is by such things as this that I propose to be governed in making the list recommended to-day.

We have four pears for which we offer the largest premiums offered. The general experience of exhibitors and growers for the market justifies the selection of the big four in three cases out of four. Three of these pears are listed here,—the Anjou, the Bosc and Sheldon. These are pears that the general public has had a good degree of success with. They demand on the average the best prices that any pears demand in the market. The Comice is also one of the big four, but there is not much of a market for it, but on account of the superiority of the Comice in flavor and quality I think that it should be kept on our list. There are two pears in the market list which I should recommend to be dropped, the Giffard and Dana's Hovey, which I should place in the amateur list.

People like a russet pear better than a green pear. The Seckel pear in quality is a standard of excellence, and I have found within a year or two that physicians would allow their patients to eat a Seckel pear when they would not permit them to eat any other pear at all.

The Lawrence, which has in the last ten years increased in quantity and quality, I would recommend to be placed in the general and market list. I would recommend that the Anjou, Bartlett, Bosc, Seckel, Sheldon and Lawrence be placed on the general or market list and that the Giffard be dropped; that Dana's Hovey be placed in the list of amateur culture.

We find some pears which I should hesitate to recommend, for certain pear trees seem to be peculiarly subject to pear blight

and it is well to avoid setting these out. What to do with the amateur list I would rather leave to others to determine.

The market list as above recommended was accepted and the revision of the amateur list left to the committee appointed by the chair.

PEACHES: MR. COOK OF SHREWSBURY.

The list which I have selected have been for Worcester County and its vicinity.

First is the Greensboro, of Chinese origin, very hardy in bud and you will get good peaches when no other peaches will blossom. It is a clingstone and the most hardy peach that I know of.

Second, the Mountain Rose. This ripens in August, is quite hardy in the bud and is a good market variety.

Third, the Late Crawford for the last few years has been a most profitable peach to grow. It comes at the season when other varieties are out of the market. If you get a real Late Crawford you get a good peach.

Fourth, The Crosby, one of those hardy peaches which will bear when other peaches fail; it is of good quality, but not so marketable as some.

Fifth, The Alberta, the most popular peach of the day, but, at the same time, one of the poorest peaches of the day. It is showy and a good seller.

Sixth, Old Nixon is a white peach, hardy, sells well.

This list as recommended by Mr. Cook was adopted.

These reports causing considerable discussion a motion was made by Mr. Hixon that a committee of three for each section be appointed by the chair to report a list for the society's consideration at the meeting Thursday, Feb. 22.

It was carried and the chair appointed the following committee:

APPLES: George Calvin Rice, O. B. Hadwen, A. A. Hixon.

PEARS: Arthur J. Marble, James Draper, A. K. Gould.

PEACHES: Herbert A. Cooke, David L. Fiske, Simon E. Fisher.

PLUMS AND SMALL FRUITS: Herbert R. Kinney. H. Ward Moore, Asa W. Ward.

8th February,

LECTURE

BY

MRS. FRANCES A. MORTON, SUPERINTENDENT.

Subject:— What is being done inside and out at the Reformatory Prison for Women, Sherborn.

I cannot presume to pose as a horticulturist. Your life work has been the beautifying of nature while mine has been along different lines. I have been invited to tell you something of the work of the reformatory prison, both on the inside and the outside. Still, my work is similar to yours, as on the inside we are trying to cultivate the heart and on the outside we cultivate the soil and get near to nature's heart.

Our farm comprises about 300 or 400 acres; part of this is under cultivation and part is used for pasturage. In our barns we have stored 300 tons of hay and the silo holds 250 tons of ensilage. We have a herd of about 100 head, 53 cows, the rest small and young stock and we slaughter a large part of the beef and veal used in the institution. At Christmas time about 1,800 pounds was slaughtered and this month will slaughter 400 pounds more. The Christmas dinner was fresh pork and that will be what they will have on the 22nd of February. Our hennery has accommodation for 1,000 fowl and we raise our own vegetables. Our women take care of these and this outdoor life does more than medicine to build up our women. A large majority of our women gain in weight from 25 to 35 and even 40 pounds from the time they enter until they leave the institution. They are weighed when they enter and when they leave the institution and in each case there is a gain in weight.

We employ a foreman and five men to do the farm work. The foreman attends to planning the work and the rotation of crops and keeping the men employed. Each year we do something to beautify the grounds. Maple trees have been planted and the grounds graded, etc.

I will now give you a little idea of the work on the inside and some of the methods used.

The work of managing and caring for women prisoners has been advanced and I trust with some degree of benefit. We have read of prisons in the early history of the world and comparing these with prisons of the present we remember with gladness of heart that the world has had John Howard and Elizabeth Frye. It was not given to them to know of the great advancement in prison work which we have lived to see, but there are still greater heights for us to attain. The important question that I am forced to ask myself daily is — How shall the women in the reformatory be lifted up? The same methods that are used in the outside world to uplift people must be used in the prison. The terrible enormity of crime must be impressed upon them. The first move to be made toward a reasonable beginning is to form an acquaintance with each individual. Learn about her early home life and what things first led her from home, but this must not impress the woman as being done from curiosity but rather make her feel that a friendly interest and desire to help her prompt these questions. This work must be earnest, individual work. The women must feel that they have in us a friend, although they must also feel that the prison discipline must be enforced. It is our aim to lead our women to forget their past irregular lives and fill their minds with uplifting thoughts, always keeping their hands as well as their brains employed. Having learned sufficient of their past history to aid us in helping them, close the door to their past life. Now we will not look back.

The first three years after the institution had been established, women were sent to prison for a few days, or a few months, but at the end of three years the law was changed and definite sentences assigned, and every woman must stay a year,

the shortest time—this being changed in 1903, when the indeterminate sentence law was passed. Under the new law we have the 1st, 2d and 3d grade. The 2d grade takes every person who enters the prison, where she remains until she has earned a certain number of credits. If sent for misdemeanor, she must remain in the first grade three months before being recommended for release. If sentenced for felony, she must remain in the first grade five months with perfect conduct. This new law has been in operation two and one-half years, which is hardly long enough to pass judgment upon its value. This year, with the exception of fifteen women, all those in my first grade, numbering seventy-five, wear honorable badges, simply a bow of red ribbon on the left breast, and those inclined to take the temperance pledge wear a silver T on the bow. Of the fifteen I have been obliged to degrade eleven to the second grade and one to the third grade. When a woman goes upon the third grade she loses all the time she has spent with us.

From July 1st, 1904, to August 1st, 1905, the average number of prisoners was two hundred. During that time twenty-four were returned to us by revocation of permit. The whole number returned during the twelve months was forty-six, thirty-one for drunkenness, nine for immorality, five for larceny, one for assault. Most of the women whom we receive now have very weak minds.

Obedience is the first lesson taught and enforced when a woman begins her term and also faithfulness; we realize that regular work with certain relaxation is needed to strengthen the mind. We have no regular recreation, but I frequently read items from the paper to them, take frequent walks; whatever comes to my mind that I think would be inspiring or elevating to them, I give to them. I once called my women from their work at an early morning hour to listen to music by some passing musicians. I went out and called them into the lodge and asked them to play for us, then called all the women to the lawn. Sometimes in the cool of the day a few minutes of talk either by myself or the officers. Our women are taught how to apply themselves; they have very little idea of application

in any degree. The worst thing of all is idleness, for idleness tends to corruption of soul and body. The only object of helping women in prison is to shut out self and employ each woman at whatever work will best be calculated for her mental and physical welfare, and also prepare them for living when they return to the world. If a woman comes to prison who does not know how to sew, she is taught. The women who cannot read or write are placed in school at once, or as soon as received from the hospital. We now have a hospital and every woman, after she has passed through the bath room, is taken to the hospital and kept there as long as it is necessary, so that no disease may be brought into the institution.

They are taught to read and write until they can avail themselves of the library privileges and write their own letters. Sometimes, a woman will say, "If I had known how to read and write, I should have had something to take up my leisure moments." The day schools are compulsory for those who cannot read or write. The evening school are for the grades and all may join; the studies taught are similar to those taught in the grammar grades with especial attention to arithmetic. We have had a class in physical culture but find it is not very successful because they are too weak-minded or too old, so that has been dropped. It is my pleasure to meet my women for one half-hour once or twice a week and give them a talk about home life, the care of the home, care of children, and whatever pertains to the welfare of the home.

We have a mulberry park and in the summer we go there for our services. We have a small baby organ, and music holds a very prominent place in our service. Two evenings a week we devote here to song.

That the body may grow strong a variety of industries are carried on. In our sewing room are made a large variety of garments for institutions in the State beside our own house. In our shirt room we make only shirts. The hospital gives an opportunity for our women to become trained in taking care of the sick. There is not a pauper in the institution I am glad to say, for a pauper should never have the stigma of prison life.

The punishments are given with great carefulness and in a way that tends to discipline. Much time is given to individual work with each person. Not a single week passes that I do not see two-thirds of my women individually. I often send for them to come to me and have talks with them. Conformity to the rules of the institution must be brought about, the punishment is governed by the gravity of the offense. No misdemeanor is ever passed by unnoticed. I sometimes make them feel that only a little thing is grave, and in this way avoid many greater punishments. It may be by a loss of marks or by meals in her room.

Great tact and good judgment are required in handling the women, and a person must be gentle yet firm.

February 15, A. D. 1906.

ADDRESS

BY

EDWARD W. BREED, Clinton.

Subject: — Herbaceous Plants.

In my desire to have some one speak for the Society on pæonies and herbaceous plants I have got myself into trouble. This is a very interesting class of plants. Herbaceous plants have been defined as those having an annual stem from a perennial root. They include an innumerable number of varieties being found in every department of gardening. Our ancestors, perhaps, paid more attention to the herbs from which they made their medicines than to decorative plants, although the latter were by no means neglected, as nearly every house had its garden with the boxwood border. It is interesting to note that this type of gardening is now coming to the front and that the leading plantsmen of our times are now devoting their energies to the improvement of these old-time plants. The term, "herbaceous border" is generally used as the place given over to the cultivation of this class of plants. In selecting a position for this border we should choose a southern exposure if possible, with a background of small trees or a hedge. It may also be placed as a screen to the vegetable garden. If the grounds are limited we must be satisfied with a few plants arranged in the best manner. The ground must be well drained. If the subsoil is gravelly or sandy this will suffice, but if of clay, we must use six inches of rough material as a foundation, with twelve inches of good soil over. The soil should be of a fine loam, of a sandy nature, well supplied with humus. The roots of many of the herbaceous plants go down deep, and where the ground

is well prepared they will withstand the varying climatic conditions.

In preparing a herbaceous border, remember it is not for a month or a single year, but for ten or twenty years, and it will pay to do the work thoroughly. In planting, the tall plants should be used mostly at the back but not with too much formality. They should be planted in irregular clumps, and where different kinds come together they should intermingle with natural effect.

All flower stems should be cut back after blooming, for in the case of delphiniums, a second crop of flowers will come. Where the whole plant is cut and no further bloom comes for that season, like the oriental poppies and hollyhocks, there should be something started in advance to fill this space. Frequently annuals can be used for this purpose. Lilies are also valuable in this connection.

One important feature in the care of herbaceous plants is the mulching, which conserves moisture, adds fertility and produces a more uniform temperature of the soil. During the present open winter, this has been very essential. Nothing injures vegetation more in the winter than sudden changes in temperature. Coal ashes are frequently used about the crowns of plants to keep the slugs away. During their early growth, and while they are making their flower stems, many of the plants are benefited by frequent waterings. This is particularly desirable with pæonies and Japanese iris.

Each year it is necessary to thin out the plants that grow rapidly, or the border will soon lose its original proportions. The sunflowers and asters, for example, if left undisturbed for a few years, would overrun their neighbors. Then the phloxes are greatly benefited by division, while with some kinds, like pæonies, they would be better undisturbed.

Twelve desirable herbaceous plants with time of flowering are:

Columbine, - - May.
Pyrethrum, - - June.
Iris, German and Japan, June and July.

Pæony,	May and June.
Oriental Poppy,	June.
Hollyhock,	July.
Larkspur,	June and later.
Phlox,	July to September.
Gaillardia,	" " "
Cardinal Flower,	August and September.
Sunflower,	July to September.
Asters,	September and October.

An additional list of desirable herbaceous plants are:

Windflower,	September and October.
Spirea Japonica,	June and July.
English Daisy,	May to July.
False Camomile,	September and October.
Hairbell,	July to August.
Lily of the Vally,	May and June.
Bleeding Heart,	May and June.
Plantain Lily,	August to October.
Baby's Breath,	June and July.
Sneezewort,	September and October.
Day Lily,	June and July.
Alum Root,	June to September.
Swamp Rose Mallow,	July to September.
Pea,	June to October.
Lupin,	July and August.
Horse Mint,	July to September.
Forget-me-not,	All the season.
Polyanthus,	May and June.
Stone Crop,	September and October.
Compass Plant,	July and August.
Stokes Aster,	August to October.
Speedwell,	August to October.

Those who engage in the cultivation of the pæony should possess time, money and patience. They are not plants that yield quick returns, but an investment in good varieties is sure to give satisfactory results.

Thorough preparation of the soil is desirable for pæonies.

Eighteen inches of soil is none too much. An abundance of dressing should be deeply worked in before planting. If they are grown for propagation, a lighter soil is recommended, but where they are to remain and simply produce flowers, a little heavier soil is required. Some gardeners recommend excavating the entire bed, and after the drainage has been cared for placing six inches of barnyard manure on the bottom, and filling up 12 to 18 inches with rich loam, while others only dig out a hole two feet in diameter and treat in a similar manner.

The pæony will grow almost anywhere but will respond to liberal treatment. Fall is considered the best time to plant, but early in the spring will produce good results. It must be borne in mind that nothing ought to be expected the first year, for that should be devoted to root growth. Often when planted in the spring they do not make any top growth, and so we are surprised on examination to find a vigorous set of eyes under the surface all ready for the following season. There is a difference of opinion concerning the time a pæony should be left undisturbed, some recommend eight to eleven years, while others say twenty.

In separating the roots they are apt to break, being so brittle, but if they are left in the shade for a few hours and wilt, they can then be readily divided, after which they can regain their original plumpness by being placed in damp moss. In case you are dividing rare varieties, do not throw away the broken roots, for many times these, if planted, will form eyes and in time make plants.

Where the grounds will admit, pæonies should be planted three feet or more apart, with their crowns three inches below the surface. Fine manure worked into the ground about the plant in the spring is desirable. In the fall a heavy mulching of manure four or five inches, should be placed over the crown.

Pæonies are now quite extensively grown for the use of cut flowers. As cut flowers they should be cut early in the day, and immediately placed in a jar deep enough so that the flowers will almost touch the water, and after a few hours they can be arranged in a vase in the usual manner. The flowers of the

double varieties should be cut just as they are opening, and the single kinds soon after they show color, so that they will open the first time in water.

The American Pæony Society has done much to straighten out the names of pæonies. There is also a pæony committee of the Society of American Florists, who are working along the same lines. They recommend the following twelve pæonies as best for general cultivation, covering the entire season of flowering:

Tenuifolia, single and double.
Festiva Maxima, white.
M. Jules Elie, glossy pink, fragrant.
Delicatissima, delicate rose.
Gigantea, early pink, large.
Louis Van Houtii, crimson.
Officinalis, crimson, also white.
Pottsii Alba, white.
Livingstone, pale pink bordered carmine.
Richardson's Rubra Superba, deep crimson, late.
Couronne d'or, white with yellow shading.
Delachei, dark crimson.

Twelve additional valuable ones are:

Baroness Shroeder, white.
Floral Treasure, bright pink.
Lady Alexandra Duff, French white.
La Tulipe, flesh pink, shading to ivory white.
Modele de Perfection, clear pink.
Mt. Blanc, white.
Edulis Superba, shell pink.
Golden Harvest, white and yellow.
Lady Bramwell, silvery rose.
L'Esperance, rose.
Marie Lemoine, sulphur white, late.
Richardson's Dorchester, bright rose, dark centre.

February 22, A. D. 1906.

Report of the committees appointed by President Hadwen at meeting of the society Thursday, Feb. 1, to report a list of fruits for the consideration of the Society, was read by Secretary Hixon and accepted and adopted.

Apples, for general or market culture:
Early, Astrachan,
Oldenburg,
Sweet Bough,
Williams.
Autumn, Fameuse,
Foundling,
Golden Sweet,
Gravenstein,
Wealthy,
Hubbardston,
McIntosh.
Winter, American Beauty,
Baldwin,
Rhode Island Greening,
King,
Leicester Sweet,
Northern Spy,
Fallawater,
Palmer,
Roxbury Russet,
Sutton Beauty,
Pound Sweet.
For Amateur culture:
Bellflower,
Maiden's Blush,
McLellan,
Porter,
Somerset,
Yellow Transparent,
Worcester Spy,
Washington Strawberry,
Sheppard's Sweet,
Pecks.

Best six apples for one who wishes to set out trees and have a succession of fruit:

Astrachan,
Williams,
Gravenstein,
McIntosh,
Palmer,
Baldwin.

Pears, for general or market culture:
Giffard,
Bartlett,
Seckle,
Sheldon,

Lawrence,
Dana's Hovey,
Bosc,
Anjou.

For amateur culture:
Doyenne d'été,
Tyson,
Rostizer,
Marguerite,
Angoulême,
Clapp's Favorite,
Frederick Clapp,
Louise Bonne de Jersey,
St. Ghislain,
Winter Nelis,
Earle's Bergamot,
Josephine de Malines,
Hardy,
Comice,
Promising Well,
Wilder,
Vermont Beauty.

Peaches, for general or market culture:
Crawford's early,
Greensboro,
Mountain Rose,
Late Crawford,
Crosby,
Old Mixon,
Champion,
Elberta.

Quinces, for general or market culture:
Orange,
Champion.

For amateur culture:
Rea's Mammoth,
Meeche's Prolific.

Plums: Bradshaw,
Burbank,
Imperial Gage,
Lombard,
Moore's Arctic,
Satuma,
Shipper's Pride,
Damson.

Plums recommended for trial:
Abundance,
Jefferson,
Coe's Golden Drop,
Climax,
Wickson.

Cherries, for general culture:
Black Tartarian,
Coe's Transparent,
Downer's Late Red,
Elton,
Governor Wood,
Black Eagle,
Montmorency.

Grapes, general or market culture:
Concord,
Delaware,
Green Mountain (white),
Worden,
Campbells.

Amateur culture:
Moore's Early,
Diamond,
Niagara,

Brighton,
Pocklington.

Currants:

Red { Dutch, Versaillaise, Fay, Cherry.

White { Grape, Dutch.

Gooseberries: Downing, Houghton, Industry.

Strawberries, General culture: Sample, Glen Mary, Mead, Bubach,

Amateur culture: M. A. C., No. 24, Marshall, Senator Dunlap, Brandywine.

Raspberries, General or market culture: Cuthbert, Loudon.

Amateur culture: Golden Queen, Shaffer,

Black Caps: Gregg, Mammoth cluster, Souhegan.

Blackberries: Snyder, Wachusett, Taylor.

Discussion after Acceptance.

Mr. Hixon: We have some time before the usual hour of closing, it seems to me that it would be well to consider the subject further. It is about time to consider pruning, spraying, etc., and I think it would be well to discuss these so that it may be brought before the public. There is one fruit that we seem to have more trouble with than others, that is the strawberry, and as Mr. Ward is a large strawberry grower, would like to hear from him on this point.

Mr. Ward: I don't know that I can say anything that will be of much interest but will try to tell you how I grow strawberries. Before I set out strawberries I like to cultivate the land two or three years. I have never been able to get much fertilizer on the soil except by putting it on in the fall; it then becomes assimilated with the soil and the plants do better than to put on fresh manure in the spring. I always try a variety before putting out much money on it.

Mr. Draper: Mr. Ward has had some experience with Italian help. Would like to hear from him regarding them.

Mr. Ward: I have not had much experience with them but I prefer Swedes and can get all I want from Quinsigamond when strawberries are ready to pick.

For fertilizer I prefer stable manure to chemical fertilizers. For mulching I have used meadow hay and pine needles. I run the hay through the cutter so it is about six inches long. That stays on the ground better than longer hay.

MR. MARBLE: On this subject of covering strawberries, it might be well to say that the object of covering is not to protect from the cold but from the sun. It is the sun that kills the strawberry plants by thawing the ground and thus stimulates the plant. Care must be taken not to cover thick enough to smother the plants. Something that will keep the sun off and let in plenty of air. It is the open winter, with alternate thawing and freezing, that is harmful to strawberries.

MR. MOORE: It has been remarked that there is not a great supply of new varieties of strawberries. I think as many kinds are put on the market but I do not find it profitable to invest in many new varieties. This Society used to offer a prize for the display of the greatest number of varieties. I used to get this premium whenever I could and use it for buying new varieties. I think it would be well for this Society to spend $25 a year for the introduction of new varieties. It would be well for some one to find out which new strawberries are the best.

QUESTION: "Would like to ask about the people who do such a large business at Three Rivers, Michigan. If I understand their catalogue, after the berries are taken the leaves are all cut off. I would like to know if I have the right idea about this." Ans. "This is to allow of their being set without transplanting."

MR. WARD: I have tried to raise berries two years from the same plants but did not have so good success as with new plants every year. As soon as I get a crop I run the mowing machine through the field.

MR. DRAPER: In our programme for the winter we have not done much in providing for general discussion of fruit topics. We need these discussions to bring out new ideas and new methods. I think it would be a good idea to give experiences, and this has been well started by the remarks of Mr. Ward on

strawberries. Would like to say that I do not know of a better strawberry farm than that of Mr. Ward within twenty miles of this city.

My line of work brings me around the city and I have been impressed with the condition of our orchards. We at one time had fine orchards and these orchards are now going to decay. I think it would be well to look after the trees now standing and see if we cannot rejuvenate these orchards. Why not be at work getting these trees in condition for spraying? The way of treating is open to some difference of opinion. In the cutting of trees I always use something to cover the place where it is cut and the tree will gradually heal. It is terrible how some of our trees have been butchered. This matter of cutting off limbs and covering them is all important.

Regarding the matter of cultivation, some think if they place fertilizers around the trunk of the trees they have done all that is necessary, forgetting that the tree begins to take in its nourishment from the ends of the roots. I use 400 pounds of muriate of potash, 200 pounds of nitrate of soda, and 400 pounds of ground bone for fertilizing an orchard.

Mr. Fiske, of Grafton: I have raised peaches considerably and perhaps my views are somewhat different from those of others. I believe that the peach yellows is the greatest drawback that we have in raising peaches here. The climate is perhaps somewhat against us but I don't know but we are in as good shape as they are in some other parts of the country. We have grown peaches on our farm ever since I can remember, and there has not been a year but that we have had some peaches. I am inclined to think that on hilly land peaches are raised as successfully as in sections like New Jersey and Delaware, where they have made a specialty of raising peaches for several years. Down there they have peach borers to contend with. I came near having some kind of a borer that I found in some plum trees that I bought from Minnesota. I took hold of them in time, however, and prevented their doing any damage.

In regard to peach culture, I plan my orchard so that I will

have peaches all the season. I now have them growing so that as soon as I harvest one crop another is waiting to be picked. The first begin to ripen about the 15th of July. The next that I get are the Triumph. This is a very vigorous growing tree and comes through cold whether better than any other and stands at the head for hardiness. The first year of bearing there was not many. The next year the trees bore very full and I thinned them out, but just before they began to ripen they began to rot and I lost the whole crop.

Three years ago there were scarcely any peaches in this section and these thirty Triumph trees bore more than all the other trees of my orchard. The Mountain Rose is one of the best peaches that I grow. The Champion is longer in ripening than some others and it does not color up quite enough but it is so vigorous and bears so well and bears such large peaches that I think I could safely recommend it. The Foster is like the early Crawfords and anybody who wants a good Crawford is suited with the Foster. The Old Nixon is an old standard. It originated at the time of the Revolutionary War being named for Sir John O. Nixon, and has been from that time until now pretty nearly a standard of excellence in the peach. No one will make a mistake in setting out the Old Nixon.

The Elberta is a good peach to look at but I never eat one. More of them are set out than any other kind. This seems to be the strange thing connected with the Elberta— while none of the fruit growers have a good word for it, it is the most common one on the market and it sells well.

Mr. Cook, of Shrewsbury: I agree with the previous speaker as to peaches and will say that I have had some experience in getting trees for nurseries and think the Elbertas were the only ones that proved true. It is very hard to get trees that will be true to name. I think the most reliable way is to grow your own trees. Select buds from good hardy trees and you will be pretty sure to get what you want.

Save the seeds so as to be ready for planting in the spring; crack the shell and plant just as you would peas and by the second year you can have good trees.

I think the yellows is a climatic condition. When I first begun to grow grapes the vines died and I found the cold winter had killed vines down to the roots and I think it is this that injures the trees. We never hear of yellows in grapes, still they have the same symptoms as yellows in peaches.

MR. HADWEN: Some sixty years ago I was engaged in peach culture. I planted seeds from which I raised my trees. Some of these trees lived fifty years. I did as Mr. Cook advises, budded my own trees.

I do not agree with Mr. Cook in regard to the yellows. This disease was imported into this country in 1818. It is first discovered in the premature ripening of the peach. It is all through the nothern sections of the country and in the southern sections where buds have been sent from the north to the south.

If any one is begining peach culture to-day he should send to the sections where the yellows is unknown and then his trees would be exempt. Still I think the better way would be to plant his own seed from peaches wholly free from yellows and not bud them. Run the risk of having natural fruit. It will have more stamina, resist heat and cold, and be more productive. In Georgia they have transferred buds from the north to the south that I think have inherited the disease for I had a tree from Georgia that manifested the yellows before it had been planted two years. The disease was first brought into Massachusetts in 1840 from New Jersey. Before that the people of Massachusetts had raised their own trees but found that they could buy them cheaper from New Jersey.

March 1, A. D. 1906.

ADDRESS

BY

J. LEWIS ELLSWORTH, Sec'y of State Board of Agriculture.

Subject:—Vegetables. Best Varieties for the Home Garden.

I was asked to treat this subject in a general way and I will begin at the beginning.

The importance of vegetables has been increased and their value has been found out; the low prices of vegetables, after the first that are brought to market, are such that they are not now a luxury as they were fifteen or twenty years ago, and most families find them really a necessity and they save much of the meat and grocery bill. Of their healthfulness I have no need to speak. Where vegetables are not found the people are sick with scurvy. There are certain acids in different varieties of vegetables that people need, and I think people should use more vegetables than they now do. There is no need for people to be without vegetables, even if they have only a small back yard, and the Board of Agriculture has published a pamphlet on the School Garden. In the first place I will call your attention to the value of vegetables grown here in Massachusetts, which amounts in one year to $5,546,296. There are 28,000 acres returned as growing vegetables for the people of Massachusetts.

The first thing to be done, whether you have a small garden in your back yard or elsewhere, should be to lay your plans in the spring. Have a definite idea of what you wish to do. If you are going to lay out a quarter of an acre, plot it out on paper. Have a place for beets, peas, sweet corn, and so on,

and lay your plans in such a way that you can have two crops in one year. This is the plan pursued by market gardeners. A plan is one of the most important things. No person owning a farm should begin in the spring without a plan of his farm, and know definitely what he is going to raise on certain fields, and on that plan the early crops should be marked in one color of ink and the second crops in another color. Then, after having a plan, you should follow out your plan.

The next thing is the hotbed. This can be made in anybody's back yard. It need not be very expensive; may be made of old window sash. The gardeners have their sashes three feet by six. It is an easy matter to get some stable manure and put it in the bottom. The amount depends wholly on the time of year. You can start plants in that way and raise lettuce, radishes, etc., and have them on your table at any time during the spring of the year.

Following this comes cultivation. In cultivating gardens or farms, thorough cultivation is the only thing that should be adopted. Don't plan to do more than you can do and do thoroughly. No land should be planted, either small or large, until it has been thoroughly tilled, and then after cultivation comes much easier; fertilize highly, plant properly, and with care afterwards you are sure of a crop. You must not try to plant more than you can properly cultivate and fertilize. While we feel there is nothing better than stable manure, still there are other kinds. Ten, twenty and twenty-five cords to the acre are used by market gardeners. You will find out in the end that the only true way of farming is intensive farming.

It is, however, of no use to do all this unless you have good seed. I think you can get good seed of reliable seed dealers. Buy the best that you can find. Price is no object. A dollar or so in the matter of seeds sometimes makes a difference of $100 in the crops. The better the seed the better the start of the plants. The time for planting seeds is when it is warm enough for the seeds to germinate and grow. In the general planting of seeds on farms, the best rule is when the ground is dry enough to work well, plant your seeds. If a cold rain

comes you may lose some from decay, but not often. This way lengthen out your year. The sooner you begin operations the sooner you get a crop along and another crop growing.

The after cultivation is as important as all other things. We need to begin as soon as we can see where the plants have started. Many of the best farmers go through with the harrow before the plants can be seen. If you start before the weeds start you can keep ahead of them. This should be carried out throughout the season. Just as soon as you can see the rows the horse harrow should be started. It is so also in your field—keep the harrow moving. This is needful also because by keeping the soil stirred you admit the air and the fertilizer is more easily freed. The harrow keeps the ground stirred up all the time and the crop will grow much faster. If you don't get the air into your soil the seed will not grow. The earth needs to be aerated.

Before speaking of the varieties I will say something about the harvests. The way the gardeners do is to harvest the crop when the market wants it. Take early crops like spinach and lettuce and if it sells high, that is the time to sell it. In harvesting any of your crops harvest when they will bring the most money. If for your own use pick when they are best. Another thing in regard to harvesting for market—be sure and wash your vegetables that go to market. There is an advantage in this. Spinach should always be washed. If cut when the sun is shining it wilts but after washing it comes up and is green and crisp. Wash your vegetables and put up with care in neat attractive packages. Apples are sometimes sold in New York for 25 cents apiece. They are not worth it but they are attractive. About the varieties for a small garden, there may be some difference of opinion in regard to the varieties I suggest.

Beginning early in the spring:

Lettuce: White Seeded Tennis Ball, will make a close head. For fall culture, Black Seeded Tennis Ball; this is a nice lettuce, will head in warm weather. Mistake is sometimes made of having lettuce too thick and then you wonder why you can-

not have head lettuce. It is because the heads are placed too close together. They should be fourteen inches between the rows and eight or nine inches apart in the rows.

Dandelion: French, thick leaved. Put about a foot apart.

Radishes: Early, Scarlet Globe.

Cucumber: White Spine.

Spinach: Thick leaf. Sow thickly and manure highly. Should get a crop six weeks from the time the seed is sown.

Beets: Early, Crosby's Egyptian; late, Edmands.

Parsley: Arlington double curled. Always salable, fine and white.

Melons: A blight seems to have struck the melons so it is not feasible to try to raise them unless you can do it early in the season. Millers Cream and Rocky Ford.

Peas: Alaska, very early; Gradus, Maud S., General Butler, Thomas Lawton. The Gradus is early, has a large pod, is sweet and very fine.

Corn: Cory, Early Crosby, Golden Dawn. This has not been raised very much because people do not understand it. It is very sweet, something like Black Mexican corn. Late corn: Moore's Concord, Potter's Excelsior, Stowell's Evergreen.

Squashes: Early Summer, Hubbard, Early Prolific.

String Beans: Davis, Kidney, Wax (some years these have black spots), Wardwell.

Shell Beans: Horticultural, Goddard's Bush.

Cabbage: Early, Jersey Wakefield; late, Warren Stone Mason.

Tomatoes: Some localities prefer pink tomatoes, others red. The Imperial is a good pink tomato.

Celery: Paris Golden is the leader, not so good as late celery.

Late Celery: Giant Pascal, Boston Market is fine. Is not grown as much as the Giant Pascal.

Carrot: Danvers Half Long.

For celery select any soil that will raise a good crop of corn. Do not have a dry hard soil but one that is rich and loamy. It is not an easy crop to raise. The seed is sometimes sowed in the field. This takes more seed and we cannot always be sure that the seed thus sowed will come. If part is sowed and

part transplanted you will be more sure of a crop. Seeds are more liable to come up if sowed too thick than if sowed too thin. I sow my celery seed in beds and transplant, thus raising plants just right for the field. My object has been to keep the crop continually growing.

It is of no use to try to raise celery on new land. That is the place to raise cabbages. Wait until the land has been cultivated five or six years.

March 8, A. D. 1906.

THE FARMER'S BEST INVESTMENT

MRS. S. EMMA SOUTHLAND.

Once I believed that he who delivered a good address upon the successful running of a home or a grange, or read a bright paper upon the care of the cow or the pig, knew what he was talking about. But, alas, in many instances he who tells how to manage lacks all the qualities that go to make a successful leader, and he who talks upon the cow or the pig never owned either. Your own home, your own grange, the successful management of that, is the best recommendation you can possibly have that you know what you are talking about.

One of the finest papers I ever heard in regard to the running of an ideal home was by a bright little woman with whom I promptly fell in love. A few days afterward I called upon that woman in her own home. Such a scene of neglect, of dirt, of wild confusion as greeted my eyes!

At the beginning of life the mother's thoughts, hopes, aspirations and fears she bequeathes to her babe. Those of you who can look back and remember the teachings of a good mother and the influence of a good home, have every encouragement to lead honorable, honest, upright lives. But there are many who are born into this world who know not the meaning of the words home and mother in their truest sense. There are women not entitled to the name of mother who bring into the world little children.

My heart goes out in sympathy to the man or woman who has been deprived of these most blessed privileges, a good home in childhood, a good mother's teachings. Did you ever think in your deepest afflictions, your greatest humiliation of spirits,

how the influence of home, a few love-pats on your shoulder, and the mother's words, "Never mind, it will all come right in time," will come back to cheer you?

My heart goes out in keenest sympathy to the dear old fathers and mothers who have given the best years of their lives, when the blood flows swiftest, the foot trips lightest, and the hand is the nimblest, to the care, protection and the education and the making of a good home for their children.

Many children never realize what a good father they had until he is dead. Then their regrets come too late. He worked as long as his strength held out, early and late and uncomplainingly that they might enjoy life, and to provide a home. The world is full of aged breadwinners, who must keep on working, or rely upon these children for charity, or starve.

There can never be an ideal home without love, and it seems to me no home, no life, is ever fully rounded out, without the delights, cares and trials of little children.

I cannot help but think that in a very large proportion of the many homes that I have visited, that the barns were more convenient than the houses, and that there were more barns with running water for the stock than houses with running water for the wife.

Cleanliness is next to godliness. On it depends the happiness and the welfare of nations; and as the home, the cradle of the world, is the foundation of nations, it is of paramount importance that the keenest foresight should be given to the furnishings of the home, as well as the scrupulous care in maintaining that cleanliness which is of so vital importance to life and health. One does not have to possess the wealth of Solomon in order to furnish one's home in a healthful and sanitary manner. I would say to the young husband, and the old one as well, never mind if your back is almost broken, gather up the pieces and have a front yard that is green with grass, a back yard that is green with grass, and here and there the bed of flowers and shade trees to gladden the eyes, to soothe the spirit, and rest the body of the best investment that a man ever had, the good wife and mother. So many men seem to think,

"She does n't mind. She knows I would if I had time." So they turn the hens out to scratch and wallow in the dust and dirt of the front yard. What can be more discouraging to the spirit of the average woman who is striving to make for herself and family an ideal home, than a shiftless husband? How can you men be so conceited as to believe that such treatment is conducive to faithfulness?

I cannot but notice the wonderful improvements in homes during the past few years. This is honest and commendable, This striving to excel, to have all the modern improvements that one can afford in their homes. Think less of accumulating the almighty dollar, think more of surrounding your homes with beautiful things—trees, flowers, music, paintings, books, everything that is a delight to yourself and children. Make your home so beautiful that "Next to God thy home shall be," for therein is all that you love. Look at the children brought up in such surroundings, they unconsciously absorb these beauties into their nature.

The one thing necessary to make homes more ideal, and what I believe would elevate women most, is not to love themselves so much, but to love men more, their fathers, and husbands and brothers, the wage earners of the homes, who are entitled to far more affection, consideration and respect than they usually get. American women, as a rule, do not appreciate what they have in American men. A woman's first duty in life is love and allegiance to home.

First of all, in home-making, as in everything else, brains count. They make themselves felt, above all in method and organization. Systematic effort not only produces much greater results, but at the cost of much less wear and tear to the person putting it forth. On the other hand, because the superior intelligence of the home-maker would enable her to cook a little more economically, or to sweep floors a little more thoroughly than some one she could hire, it is a great mistake for her to try and do so. The economy is but trifling compared to the strain on her health and temper.

For the wife, mother and housekeeper, let us establish as a

first commandment, keep well. Without health she can do nothing. Instead of being a help to her husband and children, she will be a care to them. Second, keep cool. Think clearly, plan carefully and intelligently. Finally, be good-natured. By which I do not mean weakly indulgent. Let her be as Spartan as she pleases if she will only keep her temper. A woman who is unable to govern herself is unfit to govern others. A woman who flies into a passion and boxes her children's ears because they happen to be noisy or annoying, need not be surprised if they regard her with scant respect. A woman who permits her self to nag and scold her husband must expect him to prefer the club to her society.

Another important point is that part the mother should play in the intellectual life of the family. It is a great pity for her to become so much absorbed in the practical details of the household that she has no time for reading, thinking and mental development.

14th March, A. D. 1906.

ANNUAL REUNION AND SOCIAL GATHERING.

65TH ANNIVERSARY OF ORGANIZATION AND 63d OF INCORPORATION.

An informal reception was held from 5.30 to 6.30 under the direction of President Hadwen, assisted by James W. Stockwell, J. Lewis Ellsworth, Fred. A. Blake, Fred. H. Chamberlain, Charles Greenwood, George Calvin Rice, Walter D. Ross, James Draper, Arthur J. Marble and Secretary A. A. Hixon, after which the company marched to the banquet hall above. At the guests' table were: President O. B. Hadwen, Mayor Duggan; Carroll D. Wright, President of Clark College; Rev. C. B. Elder; Dr. George M. Twitchell, of Maine; William P. Rich, Secretary of the Massachusetts Horticultural Society; Prof. Card, Rhode Island Agricultural College; J. K. Green; Ledyard Bill, President Worcester Agricultural Society; C. D. Richardson, Master of the Massachusetts State Grange; Mrs. S. Ella Southland, J. K. Greene, E. C. Powell, James Draper and Secretary A. A. Hixon.

President called upon Rev. C. B. Elder to say grace.

After a bountiful dinner served by C. S. Yeaw, President Hadwen called to order at seven forty-five and welcomed the guests and members.

The past year with twenty-seven exhibitions, with two exhibitions for the products of the children's gardens, ten meetings for lectures and discussions has largely contributed to the advancement of our Society. We are now standing fully in the field of scientific and practical horticulture, and while the future field is comparatively measureless, it will ever stretch

out as we advance in the light of more complete investigation and knowledge, which the forces of nature are yearly to unfold.

This society should not weary in well doing. Our Horticulcultural hall with its fifty-four years, standing in the very heart of our city, with its simplicity and convenience, is not surpassed by any horticultural building in the country, yields an ample revenue for the society and is of great advantage to many society gatherings during the year. Our hall of Flora, possibly unsurpassed in its exquisite symmetry and its artistic proportions, can there be any adornment to its walls more satisfactory than the portraits of the early founders and members of this society? To the foresight of our founders may we largely attribute much of the prosperity of our city. To-day Worcester is more prosperous, more beautiful and more enlightened because of their energies.

This society has also on its roll of membership many ladies who do honor to our association by contributing to its most useful purposes.

We have to-night many distinguished guests and it gives me great pleasure to present his Honor Mayor Duggan.

Mayor Duggan: I want to thank the president of the committee for the invitation to be present and I wish to extend to the guests all the rights and privileges of the city while they are with us, and will assure them that all courtesy will be extended them if they will visit us at the city hall.

This horticultural hall is one of the landmarks of the city of Worcester, built, I believe, in 1852, before you and I were born, especially before any of the ladies were born, it has been a landmark in the city of Worcester, and the Society itself was in existence before the incorporation of the city. It is a building that is endeared to the city of Worcester because in its lower hall nearly all the mayors of this city have held up their hand and taken the oath to preserve the integrity of the city.

There is physical, ethical and moral good that comes through this society and it is an aid in improving the moral tone of the community. So I would say, "May this society long live, may its membership be increased, may its good work prosper."

PRESIDENT WRIGHT, of Clark College.

I had the pleasure of speaking to you about a year ago and I then said something about experiments in advancing plant life and to-night I am going to speak of what the Federal government does for the people.

We talk a geat deal about accumulative wealth and we think we have a great deal of it. Now as a matter of fact we are within three and one-half years of starvation—always are.

That is to say, that if you should take all the accumulative wealth of Massachusetts and live on it without any outside production, it would last our people for the purchase of food alone, for three and one-half years, and then we should have to quit.

Our accumulative wealth does n't amount to much. It is the power of the country to produce annually what it needs and a little more, and it is that little more that we are after. Now the Federal government aids in many ways the production of annual wealth. Are you aware that the government expends three million dollars a year and employs over 50,000 persons purely for educational and scientific purposes. It is not possible for the human mind to take in the production of agriculture alone for the past year.

We hear a great deal about young men leaving farm lands, and the young men do leave the farming districts but the Federal government is trying to keep them there so that there may be a better distribution of labor.

There is a good deal of arid land where cattle will not live but where they might live. The chief production there is cactus, and experiments are under way to grow it without spikes and then the cattle could live on it. England has no department of agriculture and would not think of putting out any information that would be of help to the farmers, but our government supports the weather bureau which is a help to produce wealth, not here, but in the West it has a positive value. It saves all that is expended on it in saving from floods alone.

You all know what the government has done in saving

plants, in producing new varieties of fruits thus adding wealth to the country. Has encouraged rice production also tea culture and one of these years we will raise our own tea.

The work of the agricultural colleges, the work for the Board of Agriculture, the work of societies like this should be supplemented by the educational work of the public schools in teaching about soil, nature, and things that grow from the soil. In some of the States we find the schools equipped to teach the children something about agriculture. There is no more reason why a boy should not become interested in the growth of plants and seeds as in other things but it has been neglected. Now with the establishment of the school garden we are leading up to the highest agricultural education in our public schools and I hope the time is not far distant when every school curriculum in Massachusetts will be enriched by the addition of this study, and this will help to make farming more intensive. It is only by the influence of intelligence that we acquire these educational elements.

Other speakers were William P. Rich, secretary of the Massachusetts Horticultural Society, Mrs. S. Ella Southland, of the Massachusetts State Grange, Prof. Card, of the Rhode Island Agricultural College, Dr. George Twitchell, of Maine, Ledyard Bill, president Worcester Agricultural Society, J. K. Greene, E. C. Powell, New England Homestead, and James Draper.

Speaking was interspersed with singing by the Schubert Male Quartette.

At 9.15 the meeting was adjourned to the lower hall, where dancing was in order until 12 o'clock, President Hadwen leading the march with Mrs. Southland.

The floor director was Arthur J. Marble; assistants, A. M. Powell, William K. Stanley, Ed. A. Bartlett; aids, Fred H. Hammond, Robert B. Rich, Henry E. Kinney, Myron E. Converse, Allyne W. Hixon, Burt W. Greenwood.

14th January, A. D. 1906.

LECTURE, ILLUSTRATED BY STEREOPTICON,

BY

F. A. WAUGH, Professor of Horticulture, Massachusetts Agricultural College.

Subject:—The Results of some Experiments in Pruning.

The subject of pruning is an old one and has often been discussed by horticulturists. We used to think that it was of prime importance—that the orchard was largely dependent upon pruning. It is remarkable to see how this subject has fallen into neglect in recent years. So much has been said about spraying that pruning has sometimes been overlooked. I have been interested to note what has been said here as to what must be done to grow a fine orchard and that we must know how to sort and pack the fruit in order to succeed in fruit growing.

Pruning is of no less consequence than it used to be and if we have a good system of orchard management all these departments will be brought up to a high level. It seems to me that we should pay special attention to the subject of pruning fruit trees. There is one point of view from which our systems of pruning are open to criticism and that is that they are not sufficiently foresighted.

The best growers will show you what to do and you will find they are simply telling you how to correct mistakes. And so the whole business of pruning is a correction of mistakes. It is an afterthought, a taking care after instead of before.

I will just refer to the way that fruit trees are taken care of

on the other side of the water, not that I approve of the method, but a Frenchman makes a plan on paper of just how he wants a tree to grow; he will show you just where every one of those branches is to be. This system has foresight, and from this point of view our systems are open to criticism.

It is impossible to tell all about pruning in one lecture, but I will first show pictures that indicate how pruning is neglected, and later pictures showing how trees should be cared for.

If I were going to buy an orchard I should not ask the owner if his trees were fruitful. I would go and see the trees for myself.

We have here pictures of trees with wide-spread branches, that prove that the farmer works at a disadvantage in having the branches of trees grow out thirty or forty feet into the next farm or up into the sky thirty or forty feet, for we can easily see that it is not the best way to pick apples out of the sky.

In planting young trees it is very important that there should be a well formed head.

OFFICERS AND COMMITTEES
OF THE
WORCESTER COUNTY HORTICULTURAL SOCIETY,
FOR THE YEAR 1905-1906.

PRESIDENT:

O. B. HADWEN, of Worcester.

VICE-PRESIDENTS:

*STEPHEN SALISBURY, of Worcester, GEORGE CALVIN RICE, of Worcester,
JAMES DRAPER, of Worcester.

SECRETARY:

ADIN A. HIXON, of Worcester.
Horticultural Hall, 18 Front St.

TREASURER:

NATHANIEL PAINE, of Worcester.

LIBRARIAN:

ADIN A. HIXON, of Worcester.

TRUSTEES (BY ELECTION).

George Cruikshanks,	Lunenburg.	David L. Fiske,	Grafton.
O. B. Wyman,	Shrewsbury.	Henry B. Watts,	Leicester.
Charles E. Parker,	Holden.	W. U. Maynard,	Shrewsbury.
Frederick A. Blake,	Rochdale.	Edward A. Bartlett,	"
Henry L. Parker,	Worcester.	James W. Stockwell,	Sutton.
Henry Woodward,	"	E. M. Bruce,	Leominster.
John B. Bowker,	"	George McWilliams,	Whitinsville.
B. W. Potter,	"	Edward L. Davis,	Worcester.
Frank J. Kinney,	"	Henry Reed,	"
Alden Rice,	"	Henry Phelps,	"
Arthur E. Hartshorn,	"	H. Ward Moore,	"
George E. Francis,	"	Frederic G. Stiles,	"
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Louis J. Kendall,	"	Stillman H. Record,	"
William O'Connell,	"	Simon E. Fisher,	"
Charles Greenwood,	"	Lewis A. Peters,	"
Arthur J. Marble,	"	William J. Wheeler,	"
Samuel Flagg,	"	J. Lewis Ellsworth,	"
Edward Hall,	"	Leonard C. Midgeley,	"
H. F. A. Lange,	"	Mrs. John H. Coes,	"
Fred H. Chamberlain,	"	Mrs. T. L. Nelson,	"
William J. Wood,	"	Mrs. Thomas Ward,	"
Calvin L. Hartshorn,	"	Mrs. F. H. Merrifield,	"

Edward W. Breed, Clinton.

STANDING COMMITTEES.

ON FINANCE:

Nathaniel Paine, 1907. Fred H. Chamberlain, 1906. Calvin L. Hartshorn, 1908.

ON LIBRARY AND PUBLICATION:

Adin A. Hixon, Arthur J. Marble, Edward W. Breed.

ON NOMENCLATURE:

O. B. Hadwen, Henry E. Kinney, Albert H. Lange, Arthur J. Marble,
George McWilliams, Herbert R. Kinney, Charles Greenwood.

ON ARRANGEMENTS AND EXHIBITIONS:

Charles Greenwood, *Chairman.*

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Albert H. Lange,	Arthur J. Marble,	Herbert R. Kinney,
Mrs. F. H. Merrifield,	George C. Rice,	James Draper,
George McWilliams,	Arthur E. Hartshorn,	William J. Wheeler,
	Edward Breed,	

President Hadwen, and *Secretary* Hixon.

AUDITORS.

Charles S. Bacon, H. Ward Moore.

JUDGES.

ON FLOWERS, PLANTS, ETC.: George McWilliams, Whitinsville.
ON FRUITS, ETC.: James Draper.
VEGETABLES: Charles Greenwood.

COMMITTEE ON WINTER MEETINGS.

Arthur J. Marble, James Draper, Edward W. Breed,
J. Lewis Ellsworth, *President* Hadwen, and *Secretary* Hixon.

*Deceased.